

Revisiting Tell Deir 'Alla: A reinterpretation of the Early Iron Age deposits

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Working with an old excavation archive is a daring and complicated endeavour, but can yield intriguing results. Few know this better than Dr Margreet Steiner. While contemplating Iron Age archaeology in a small café in Leiden, she notified me of the potential of the Tell Deir 'Alla archive, and ignited in me the flame of curiosity. This fascinating archaeological site, which created such a legacy for archaeologists both in- and outside of the Netherlands, deserves to have its full potential explored. It is how I got in touch with Dr Gerrit van der Kooij, whose passion for, and knowledge of, the archaeology of the Southern Levant is hard not to be inspired by. Through both Margreet and Gerrit I got to know about Henk Franken and his legacy. My thanks go first and foremost to these three remarkable scholars, who have elevated the field through inspiration, criticism, and continuous effort.

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"What makes the desert beautiful," said the little prince, "is that somewhere it hides a well..." (Antoine de Saint-Exupéry: The Little Prince, 54)

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Chapter 1: Introduction

“Scholarly the value is to reach a better understanding and knowledge of what happened in the past. (...) Socially speaking, knowledge about what happened in the past has to be democratised, and will then bring our own existence in a relative position, which is generally bringing modesty in our mind and social thinking. And it triggers responsibility for the remains and heritage in general. In any case, the obligation exists towards the predecessors, that lived in the Jordan Valley, to take them and their legacy seriously, and with respect” (Van der Kooij 2006, 56).

When researching Iron Age I excavations in the Southern Levant, one realises just how many have never had a final report published. Much, but often not all, of the information with which such comprehensive publications were to be written, is still left waiting within numerous boxes comprising excavation archives. These are situated in basements, attics, storerooms, or depots, often simply collecting dust. Over time these archives weather: refurbishment activities, moving locations, or even vermin, mould, and leakages all contribute to possible damage to and mixing of their contents.

Fortunately, the value of such archives is being appreciated more and more. Resultantly, there is a growing awareness for the fact that they should be digitised and stored for safekeeping. Digitisation provides new opportunities for such old datasets, which can then be browsed through digitally, from anywhere in the world. The archive from the 1960s excavations at Tell Deir ‘Alla, the first and one of the most important archaeological projects conducted by the Netherlands in the Near East, is an example of this.

1.1 – Tell Deir ‘Alla

Tell Deir ‘Alla is one of the most prominent settlement mounds in the Central Jordan Valley (see figure 1), known locally as the ‘*Ghor Abū ‘Ubaydah*’, in the Hashemite Kingdom of Jordan (see figure 2). It is one of the most important archaeological sites in the Jordan Valley, and because of its uninterrupted and well-stratified occupational sequence has proven essential

in understanding the role of the Jordan Valley during the Late Bronze Age to Iron Age II periods (ca. 1350 – 600 BCE). The site was first excavated by the late Prof Dr Hendricus J. Franken of Leiden University, between 1960 and 1967, and in 1976 and 1978. From 1979 until 2008, the site was excavated on and off by Professor Gerrit Van der Kooij of Leiden University in co-directorship with the Department of Antiquities of Jordan (Dr Mo'awiyah Ibrahim), and later the Yarmouk University (Prof Zeidan A. K. Kafafi), marking almost half a century of excavations at the site.

Franken commenced excavations at Tell Deir 'Alla to study the changes in material culture during the transition from the Late Bronze Age to Iron Age I (ca. 1200-1100 BCE, or the 12th century BCE). Excavating with great stratigraphic precision, he uncovered an occupational history spanning the Late Bronze Age to the Persian period, as well as a medieval cemetery. Ever since, Tell Deir 'Alla received much scholarly and public attention, mainly due to the presence of significant ritual finds. He uncovered parts of a large Late Bronze Age temple complex with a wealth of ritual finds of an international character, showing links with both Egypt and Mesopotamia (Franken 1992). Furthermore, on the summit of the tell he encountered fragments of an Iron Age II Aramaic text written on a plastered wall, mentioning the biblical prophet Balaam (Hoftijzer and Van der Kooij 1974). This is the only extra-biblical mention of an Old Testament prophet, for which Tell Deir 'Alla received substantial publicity. These, and other, finds have led many scholars to ascribe an important ritual, and international role to Tell Deir 'Alla (e.g. Franken 1969; Van der Steen 2008c, 24).

Understandably, much of the scholarly attention turned towards the spectacular finds of the Late Bronze Age and the Iron Age II sanctuary. The Iron Age I layers in between these finds, containing meaningful archaeological material, have in comparison largely been passed by. It is the aim of this thesis to shed more light on the Iron Age I deposits. As the 1960s excavation archive has recently become available to the author, the unpublished data in this archive will be used to re-evaluate some of the preliminary interpretations done by the excavator shortly after excavation. In order to limit this research to a realistic scale for the author's MPhil, a series of fire-installations found in the Iron Age I layers was selected. Functioning as a starting point for the research on this dataset, this thesis aims to demonstrate the importance of the 1960s Tell Deir 'Alla archive, as well as the potential of working with old datasets.



Figure 1: Tell Deir 'Alla in 1960, as seen from the south (from the Tell Deir 'Alla archive).

1.1.1 – The 1960s excavations

Franken's excavation methods, while not perfect by today's standards, were ahead of their time and still largely hold up to scrutiny. When he set out to excavate Tell Deir 'Alla in the 1960s, he used his insights to thoroughly document and collect material from largely uninterrupted occupational phases ranging from the Late Bronze Age to the Persian period, as well as a medieval cemetery. His 1960s excavations resulted in two major publications: 'Excavations at Tell Deir 'Alla I: a Stratigraphical and Analytical Study of the Early Iron Age Pottery' (Franken 1969), and 'Excavations at Tell Deir 'Alla: the Late Bronze Age Sanctuary' (Franken 1992). The latter is a comprehensive study of the stratigraphy, pottery, and small finds of the Late Bronze Age sanctuary found at the site. The former, due to the original goal of the excavations, was published focussing mainly on the pottery chronology. The Iron Age I stratigraphy and architecture were briefly touched upon, with summarised versions of several original section drawings, and stylised versions of top-plans being included in the publication. Find categories that were left out of the publication include metal objects, figurines, beads, flints, ground-stone, scarabs, and bone tools.

The Tell Deir 'Alla archive, now property of the Dutch National Museum of Antiquities, has been made available to the author for further research and publication. DANS digital

repository, in cooperation with Leiden University, generously offered to facilitate the archive's digitisation, which entailed the scanning of the original field documentation. The archive contains a wealth of data, including excavation plans, elaborate cross-sections, photographs, and find drawings. Much of these data have not previously been subjected to detailed analysis and remains unpublished. While working with old datasets such as the Tell Deir 'Alla archive is not without its challenges, it brings with it many opportunities. By revisiting the old excavation archive from a modern perspective, the role of Tell Deir 'Alla during the Iron Age I can be re-evaluated. With the Near East an increasingly difficult place to conduct research, excavation archives can both provide a way for research to keep moving forward, and make sure that our predecessors' efforts and data do not go to waste.

As noted above, a well-defined excavated area and archaeological period were chosen as a pilot project: Franken's Phase B, belonging to his 'first period' of Iron Age occupation at the site. This period dates roughly to the second half of the 12th century BCE. One of the few stand-out features belonging to the Phase B deposits at Tell Deir 'Alla is a series of large installations, which for various reasons (which will be discussed in the following chapters) were interpreted as having to do with bronze-production (Franken 1969, 36-38). These installations, published as 'furnaces' by Franken, were attributed to the activity of large-scale bronze casting, practiced by semi-nomadic metalworkers (Franken 1969, 21). The metalworkers would use the favourable winter conditions of the Jordan Valley for seasonal metalworking, and leave the Valley after a season's work. This is an interpretation that has since been widely accepted by scholars, and has become part of the dominant narratives on life in Transjordan during the Iron Age I (e.g. Van der Steen 2008, 90).

1.1.2 – The Iron Age I deposits at Tell Deir 'Alla

Due to the important internationally oriented finds at the site, Tell Deir 'Alla appears to have functioned as a regional centre under radically different circumstances and over a very long period of time, from the Late Bronze Age to at least the Iron Age II (ca. 3000 – 600 BCE). The principally investigated periods showing evidence for this, the end of the Late Bronze Age and the Iron Age II, are however separated by 350 years of archaeological phases dating to the Iron Age I about which relatively little is known.

With a comprehensive publication on the Late Bronze Age remains completed, and Van der Kooij's continued work on the Iron Age II, the Iron Age I seems to have fallen through the cracks. However, the Iron Age I remains at Tell Deir 'Alla consist of no less than 4 meters of

well-documented accumulated archaeological deposits. These deposits contain significant architectural features, as well as a wealth of finds such as figurines, ornamental pottery, bronze objects, and personal ornaments. As mentioned above, these Iron Age I deposits have been thoroughly documented, but were published focussing more on the pottery chronology (Franken 1969). While this chronology still holds, many questions as to the particular processes witnessed at Iron Age I Tell Deir 'Alla still remain. The nature of activity at, and connectivity of the site during this period are still unclear. As such, much more detail can be added to our understanding of the site during this period, and its role in the wider area. The Tell Deir 'Alla archive, with its detailed catalogue of finds, architecture, fieldnotes, and photographs, provides a unique opportunity to study the local implications of this period of widespread societal reconfiguration.

1.2 – Research Question and Methodology

The Phase B installations have become a part of several scholarly debates (see chapter 3) in which they have been used on the premise that Franken's initial interpretation was correct. However, in the first major publication Franken stated *"it seems probable that they were furnaces used for casting bronze"* (Franken 1969, 38). This statement is hardly definitive, and more recent work on the Phase B installations (van der Steen 2008c), has also shown this interpretation is not as straightforward as it seems. Nonetheless, in wider debates, the Tell Deir 'Alla structures have been continuously referred to as clear evidence for metal-casting and/or smelting in the Iron Age I Jordan valley. This notion has become part of dominant narratives of life in the Iron Age of the Southern Levant. While an important comparative research of these installations was done by Eveline Van der Steen (Van der Steen 2008c), that study did not have access to the 1960s excavation archive, and therefore did not include the added value of the unpublished data. As such, no in-depth study has been done into the archaeological contexts relating to these features. Also, no analyses of the relating objects and detailed stratigraphic sequences have been published. However, the 1960s excavation archive of Tell Deir 'Alla has recently become available for research. It is the aim of the present study to conduct a comprehensive study of both the published and unpublished material, to address the following research question:

"How can a re-evaluation of the excavation documentation of the Phase B installations at Tell Deir 'Alla contribute to understanding their function, and their overall role in the Iron Age I economy?"

In order to address this question, a number of issues had to be approached. Firstly, an important goal of this research project was to facilitate the digitisation of the complete 1960s archive, and to prepare these files for online open-access. This process involved the preparation of the files, the instruction of the student assistants involved in the scanning, and the construction of a database consistent with the open-access repository. Secondly, the re-evaluation of the excavation documentation warranted an exploration on how to approach data gathered 50 years ago, and what challenges and opportunities arise when working with such data. Thirdly, the current state of archaeological debates regarding the Iron Age I had to be summarized, in order to see the material culture of Tell Deir 'Alla in a larger perspective. Lastly, to re-evaluate Franken's initial interpretation of the Phase B installations, their archaeology, stratigraphy, and possible parallels and functions, were to be investigated.

1.2.1 – Thesis structure

The structure of the thesis will be three-fold. First, a historical framework will be provided for this thesis (chapters 2 and 3). Following, the contextual evidence for the Tell Deir 'Alla Phase B installations will be evaluated (chapter 4). Finally, renewed interpretations arising from the evidence will be presented, the experience of working with legacy datasets discussed, and recommendations provided for future research (chapter 5).

Chapter 2 will discuss the 1960s Tell Deir 'Alla excavations, as well as the resulting Tell Deir 'Alla archive in detail. Firstly, the background of Tell Deir 'Alla will be discussed, such as its location, region, and size, as well as Franken's motivations for excavating the site. An overview of the excavation strategy and methods of the 1960s will be provided to give an understanding of the excavation system and the resulting archive. This part will also include some results of the later excavations at Tell Deir 'Alla. Secondly, the remaining Tell Deir 'Alla archive will be presented. In this section the archive's contents will be explored, as well as its current state. Finally, the digitisation process will be explained, clarifying the choices that were made in the structuring of the digital database.

Chapter 3 will provide a regional and chronological background for Tell Deir 'Alla during the 12th century BCE. The first half of the chapter outlines what is known about the Iron Age I period, specifically focussing on the Jordan Valley. This is presented through a summary of survey results regarding the Iron Age I, as well as excavation results from sites in the Jordan Valley. The second half of the chapter will present what scholarly debates have formed

around the archaeological evidence, and how Tell Deir ‘Alla fits into these debates. The dominant archaeological narratives presented here include the evidence for itinerant metalworkers, the Egyptian presence in the Jordan Valley, and the presence of ‘Sea Peoples’ in the Jordan Valley.

Chapter 4 will focus on the Phase B installations, the associated finds, and their wider archaeological contexts. The first part of this chapter will comprise a detailed stratigraphic analysis of relevant excavation trenches, and the contextualisation of the material originating from them. In this chapter the published and unpublished data will be integrated, combining the stratigraphy, field notes, photography, pottery, and small finds. Using the available raw excavation data from the archive, finds will be attempted to be traced back to their original contexts, and the stratigraphic picture refined. Doing so, this chapter will provide and connect all the information that is available about these installations, and address any omissions or discrepancies between the published and unpublished data. The second half of this chapter will discuss the proposed interpretations for the Phase B installation. First to be discussed are Franken’s interpretations, and the evidence he used for these. Following, possible parallels at other sites will be presented, and alternative interpretations explored. Finally, the results from the more recent excavations at Tell Deir ‘Alla will be integrated, to re-evaluate Franken’s interpretation based on all the available data.

Chapter 5 will bring all of the information together, summarizing the interpretations made in the above chapters, and articulating a new interpretation of the settlement’s significance within the reconfiguration of trade and societal networks in this poorly understood period in the history of the Levant. Furthermore, several avenues for further research on the Iron Age I will be presented.

<u>Archaeological Period</u>	<u>Dates BCE</u>
Late Bronze Age	3000-1200
Iron Age I	1200-1000
Iron Age II	1000-550

Table 1: Archaeological periods discussed in this thesis, with corresponding dates BCE.

Chapter 2: Tell Deir ‘Alla and the 1960s Excavations

“It is the nature of the archaeological evidence and the almost entire lack of inscriptional material which classify this period as proto-historical. As such it demands a different archaeological approach from that which is generally given to it” (Franken 1975, 337).

2.1 – Tell Deir ‘Alla and the Jordan Valley

Tell Deir ‘Alla is one of the most prominent settlement mounds, or ‘tells’, in the Jordan Valley. The Jordan Valley, a long and narrow trough, averages between 15 km and 4 km wide over a roughly 105 km length. It starts at the point where the Jordan River exits the Sea of Galilee in the north and ends where the Jordan River enters the Dead Sea (see figure 2), Earth’s lowest elevation on land, having descended around 200 meters over this short distance. It is part of a much larger rift valley, which stretches from the Red Sea through the Wadi ‘Arabah and the Jordan Valley, northward through the Hulah Valley and the Beq’a Valley, entering Syria and eventually ending in the east Anatolian fault in southeast Turkey (Kaptijn 2009b, 15).

The Jordan Valley is subdivided in three separate geological areas, presented here in order of elevation. Descending inwards from the highlands on either sides of the valley, one enters the highest area of the valley, called the *ghor* in Arabic (meaning ‘depression’). It is the widest part of the Jordan Valley, in which most of the modern villages can be found, such as Deir ‘Alla, Tabaqat Fahl, Ma’adi, and Kurayma. Today it is used mainly for habitation and irrigated agriculture. Descending further into the valley, one enters the *katar*, a stretch of land almost devoid of vegetation due to the marls and high salinity. These are exposed soil layers cut through by the Jordan River (Ibid., 13), which are largely unpopulated and untilled. Descending further, one enters the actual streambed of the meandering Jordan River, called the *zor* in Arabic (meaning ‘wilderness’). This narrow inner valley, on average 50 meters lower than the *ghor*, used to regularly flood in the past (Petit and Kafafi 2016, 18), and holds very fertile ground for agriculture. Both the *zor* and much of the *katar* now form a demilitarised

zone between Jordan, Israel, and the Palestinian Territories, and is used mostly for irrigated agriculture.

Because the Jordan Valley lies 200-400 meters below sea level, temperatures are usually ca. 6°C higher than on the flanking mountains. Clouds coming in from the west often disappear above the valley, only to reappear over the eastern slopes, meaning that much less rain falls in the actual valley as opposed to the highlands (Kaptijn 2009, 16). The northern part of the Jordan Valley has on average around 250 mm of rain annually, but as the valley lies so low below sea level the amount of evaporation is substantial. Furthermore, while the winters in the Jordan Valley are mild and humid, the summers are long and dry. Due to these factors, the Jordan Valley is classified as a semi-arid steppe region, which even has several small desert areas. This made irrigation essential for farming strategies, as dry farming was a risky endeavour which would often fail. However, where water is available in abundance, such as in the *zor*, a very different picture is witnessed. The flora can look *“lush and tropical and there is a rich fauna too. Until recent times large mammals such as the jackal, fox, hyena, bear, ibex, leopard and, long ago, the lion lived in the Zor”* (Van der Kooij and Ibrahim 1989, 12).

The area of the Jordan Valley where Tell Deir ‘Alla is located is commonly referred to as the Central Jordan Valley. In recent studies it is also referred to as the Zerqa Triangle (e.g. Kaptijn 2009b; Petit 2009) and denotes an artificially demarcated area between the Wadi Rajib in the north, the Jordan River in the west, and the eastern foothills and Zerqa River in the east. This is the area referred to in this thesis as the Central Jordan Valley. However, as will be explored further in chapter 3, there is only a small amount of excavated Iron Age I sites in this region. In order to have a large enough and comparable dataset of Iron Age I material, and prevent looking at this area in isolation, this research will explore sites in the larger Jordan Valley area. This area is defined by the Sea of Galilee in the north to the confluence of the Jordan and Zerqa Rivers in the south, and both of the slopes of the mountains flanking the Jordan Valley in the east and west.

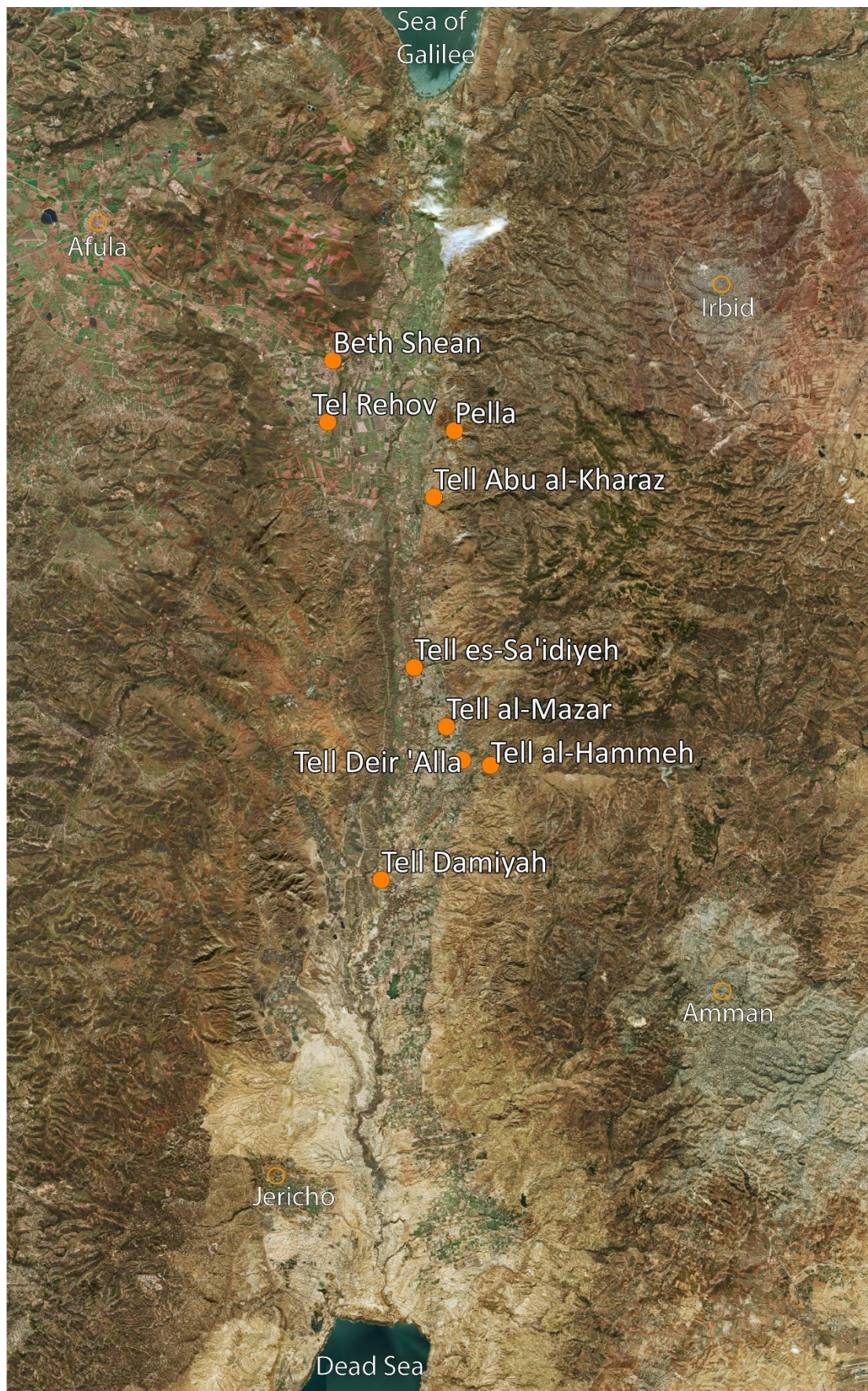


Figure 2: Map of the Jordan Valley with Iron Age I sites mentioned in the thesis. The open circles are modern cities.

2.1.2 – Tell Deir ‘Alla

Tell Deir ‘Alla, meaning ‘tell of the high monastery’, is a prominent landmark in the Central Jordan Valley, and is one of the larger tell sites in the immediate area. In his report of this region, Nelson Glueck (1945-1949, 308) describes the tell as “*one of the most prominent tells in the entire Jordan Valley, and only Tell el-Husn (Beth-shan) and Tell es-Sultan (Jericho) can compare favourably in importance and position with it*”. It commands a central point in the landscape, close to the mouth of the Zerqa Valley and the Zerqa River, and most of the nearby tells are visible from its summit. Furthermore, the site is located along several trade routes. These routes led from north to south, along the Jordan Valley, and from east to west, down the Wadi al-Far’ah, crossing the ford at Tell Damiyah, and either following the Zerqa River along and up into the Zerqa Valley, or via the ancient road going east from Ma’adi which is now the main road in and out of the valley. One such route went from Beth Shean in the north, through the eastern *ghor* to Tell Deir ‘Alla, where it would enter the Zerqa Valley and continue up to the plains of Amman (van der Steen 2008b, 133).

The site measures around 250 by 200 meters, making it a medium sized tell for this part of the Levant (see figure 3). The mound itself is 27 meters high, and its highest point is measured at 201 meters below sea level. It was inhabited at least from the Middle Bronze Age through to the Persian period, and evidence suggests it might have been inhabited during the Chalcolithic as well. During the Islamic period it was used as a cemetery, similar to many tell sites in the Jordan Valley.

Based on the depth of these Islamic burials, Franken postulated that the original surface of the tell must have been at least 1 meter higher in the 14-15th centuries CE, when the cemetery was in use. These graves also show that the slopes have eroded significantly since the 15th century. As such, the original outline of the site in the Iron Age or earlier could have differed greatly from the current shape. Franken mentions that as much as half of the mound might have eroded of the southern part (Franken 1969, 3-4). Many of the tell sites in the Jordan Valley show a similar pattern of erosion, with a steep eastern side, sloping downwards toward the west. This could be a result of centuries of the strong *sharqiyeh* (eastern) winter winds, in combination with seasonal rains and animal burrowing.

The tell is currently property of the Department of Antiquities of Jordan and is fenced off. The site contains a small visitor’s centre, as well as a modest museum in the Deir ‘Alla

Research Station in the village of Deir 'Alla. This small museum hosts numerous objects from the 1960s excavations, as well as from the subsequent excavation seasons.

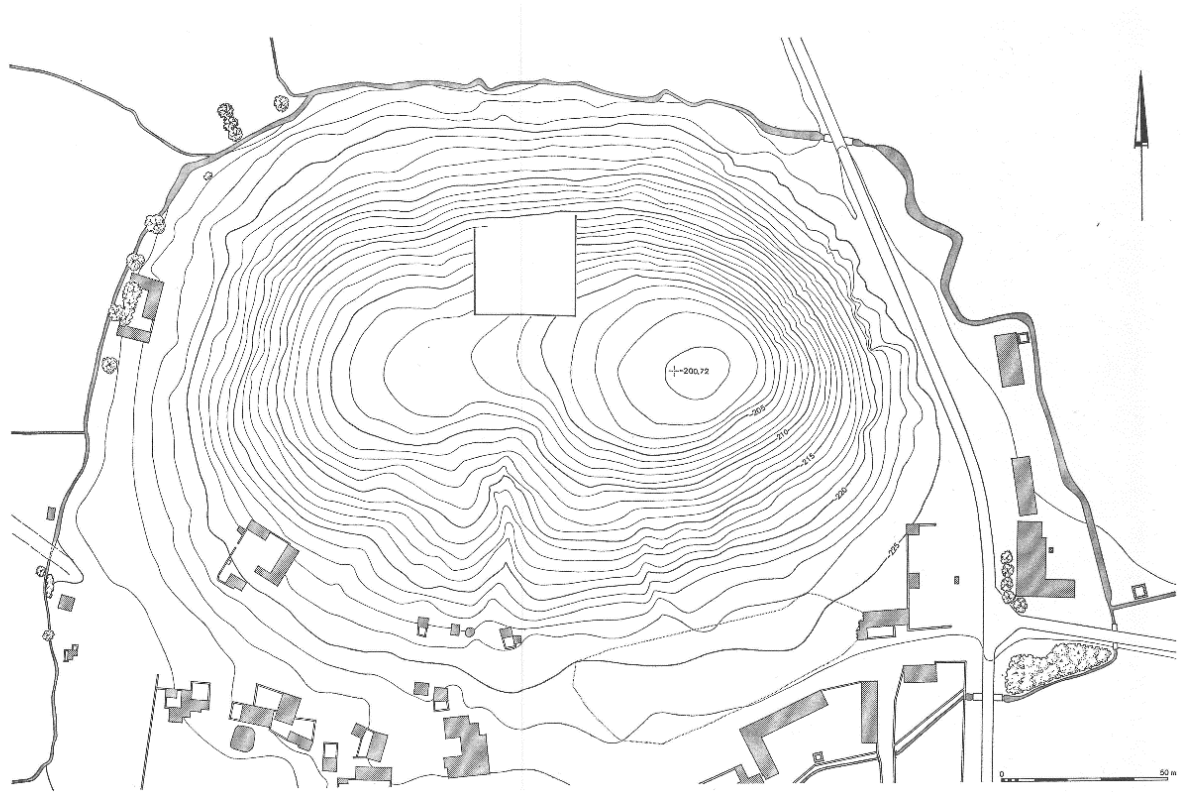


Figure 3: Contour map of Tell Deir 'Alla in 1960, showing the excavated area on the north slope of the tell (Franken 1969, 10).

2.2 – Franken and Tell Deir 'Alla

Tell Deir 'Alla was first excavated by Prof Dr Hendricus J. Franken (1917-2005), on behalf of Leiden University, during five seasons between 1960-1964, and in 1967. Franken began his career as a theologian, and after completing his PhD obtained a lectureship in Old Testament archaeology in the Theological Faculty of Leiden University. Franken obtained funding from the ZWO, the Dutch Organisation for the Advancement of Pure Research (now NWO), to study the field techniques required to excavate in the Middle East. The Dutch governmental research institute deemed it necessary that Dutch scholars obtain practical experience with excavation techniques, and funded Franken so that he might run his own project in the future, independently (Steiner and Wagemakers 2018, 38). At the recommendation of Gerald Lankaster Harding, then director of the Department of Antiquities of Jordan, he contacted

Dame Kathleen Kenyon to study with her at the 1950's excavations at Jericho. He participated for three seasons at Jericho, between 1955 and 1957.

Jericho had not produced an archaeological sequence covering the transition from the Late Bronze Age to the Iron Age, the period he was interested in. Apparently, Kenyon had hoped to also document this, but Tell es-Sultân did not yield any occupational phases from that period. Kenyon was however able to establish a clear stratigraphically substantiated chronology for the periods from the Neolithic to the end of the Middle Bronze Age. Franken wanted to do the same for the Late Bronze Age and Iron Age I. To do this he had to pick out another site in the same region, which could provide stratified material that would continue the chronology established at Jericho (Franken 1969, 2). Though explicitly not his primary goal, Franken also hoped to excavate a site that could give archaeological insights into the Israelite arrival into Palestine. If not evident at Jericho, then perhaps another site close to the Wadi Far'ah might provide this information. Having worked at Jericho, Franken was trained in the excavation of mud-brick sites. Due to this experience he was of the opinion that such sites often provide a much greater depth of finely stratified deposits than stone-built sites. He set out to find a site with mudbrick architecture close to the Wadi Far'ah, and did so at Tell Deir 'Alla. Franken had visited Tell Deir 'Alla during his travels through the Levant, and became convinced this site held the most potential for the type of excavation he aspired. The site he had in mind needed to be big enough to provide representative data from each occupational layer. On the other hand, it needed to be small enough in order to reach the relevant layers without too much loss of time. Franken was of the opinion that Tell Deir 'Alla met both of these requirements, and began organising the first season of excavation (Steiner and Wagemakers 2018, 43).

On 4 January 1960 the first pickaxe hit the soil of Tell Deir 'Alla (Ibid., 86). The main focus of these initial excavations was to establish the chronological change in material culture at the transition from the Late Bronze Age into the Iron Age I (Franken 1969, 1). In his own words, to *"collect a representative collection of pottery shapes in strict stratigraphical sequence"* (Franken 1969, 11). At the time, little was known about this period (van der Kooij and Ibrahim 1989, 22). While extensive pottery chronologies existed, they were not based on solid stratigraphic evidence. This is what the excavations at Tell Deir 'Alla would change. The site of Tell Deir 'Alla fitted neatly with his goals: it seemed to be one of 'normal' occupation. No palaces or city walls were to be expected here, simply a chronology of normal life during the Late Bronze Age and Iron Age I. The second aim for the excavations at Deir 'Alla was to train Dutch archaeologists to excavate Middle Eastern tells. As professor of Archaeology at Leiden

University, Franken was blessed with the responsibility of educating a new generation of Near Eastern archaeologists, something he did with great passion (Steiner pers. com.). Franken kept in touch with Kathleen Kenyon, who even visited the site during the excavations (see figure 4).



Figure 4: Franken and Kenyon during the excavations at Tell Deir 'Alla (from the Tell Deir 'Alla archive).

Between 1960 and 1967 Franken and his team excavated at Tell Deir 'Alla. During these excavations, he exposed a history of occupation stretching from the Middle Bronze Age to the Persian period, as well as an Islamic cemetery. About halfway down the northern slope of the tell, Franken encountered the remains of a substantial Late Bronze Age temple, containing a wealth of ritual objects. Furthermore, the temple complex yielded clay tablets containing an as yet not deciphered script. Exactly that which he had hoped to avoid excavating at Tell Deir 'Alla, did in fact happen, as he writes:

"... that the best plans go astray is well illustrated here. That portion of the tell which, had the aims of the expedition been different, would almost certainly have been selected for excavation was avoided. As a result an area which superficially looked of only average importance and interest but which, as it turned out, concealed the main cella of the L.B.

sanctuary was selected. The very situation, which such pains had been taken to avoid, occurred” (Franken 1969, 12).

Furthermore, while excavating higher up the slope of the tell in 1967, he discovered another ritual building dating to the Iron II period (ca. 850 BCE). This building yielded fragments of wall plaster, which contained texts and drawings (see figure 5). These texts were written in a form of Aramaic, and contained a unique version of the story of the biblical prophet Balaam (Hoftijzer and Van der Kooij 1976). These extraordinary finds generated a lot of attention for Tell Deir ‘Alla, both scholarly and popular.



Figure 5: Fragments of the Aramaic texts from Tell Deir ‘Alla (from the Tell Deir ‘Alla archive).

2.3 – Identification of the site

The history of the investigation of Tell Deir ‘Alla goes back further than the excavations of Franken. As was usual in the early days of ‘explorations’ of the Middle East, western travellers and explorers often attempted to connect physical archaeological sites to places mentioned in the Bible. This was no different for the Jordan Valley, and Tell Deir ‘Alla eventually became part of this type of research. It was specifically not Franken’s objective to prove or disprove

Tell Deir 'Alla's biblical identifications. In fact, he was of the opinion that many of the 'ethnic changes' in the Late Bronze Age would not be observed in the archaeological record if not for the impact of the biblical traditions (Franken 1975, 337). However, its biblical connection was something one had to at least address in the 1960s (Franken 1992, 167). For the purpose of providing a solid background for the excavations by Franken and the subsequent Tell Deir 'Alla archive, it is of importance to reconstruct Tell Deir 'Alla's role in the debate of identifying biblical places.

Selah Merrill, a 19th century explorer who visited Deir 'Alla, identified the site with biblical Succoth (Merrill 1881, 388), an identification which is still accepted by many today. His identification is based largely on etymology of the place name, and the position in the landscape derived from the biblical description of Succoth.

Etymologically the identification begins in the biblical mention of Succoth. Succoth, meaning 'tents' or 'booths' in Hebrew, is mentioned in Exodus 12:37 as one of the stations during the Israelite Exodus, and is believed to be in the 'Land of Goshen', the Eastern Nile Delta, and as such did not qualify for Tell Deir 'Alla. Another Succoth is mentioned in Genesis 33:17, as the location where Jacob, returning from Padan-Aram, built a house for himself and made booths (or Succoth) for his cattle. This location is said to have been in the Jordan Valley. Another mention of this Succoth comes from the book of Judges, in which the 'princes of Succoth' refused helping Gideon and his men, after they pursued a group of Midianites which was on the run after the battle of Gilboa. Yet another mention regards the battles of Saul and David (1 Samuel 17:1). The 'plains of Succoth', as mentioned in 1 Kings 7:46, is also traced to the area around Tell Deir 'Alla and will be explored further in chapter 3.

These biblical mentions provided a link between the city of Succoth and the Jordan Valley, specifically the area of the Jabbok River, the modern Zerqa. This connection is also brought forward by Jewish historian Josephus, who mentions that the location is still called 'Tents' in his time (Josephus in Whiston 1794, 137). The link to Tell Deir 'Alla was provided by the Jerusalem Talmud, which states that the modern name of "Succoth is Darala" ("Shibiit", ix, 2, Gemara). Merrill links this 'Darala' to the Arabic name of the site, Deir 'Alla (Merrill 1881, 387).

This identification of Tell Deir 'Alla with Succoth however, received much scrutiny already in the early 20th century. Nelson Glueck for example, is quoted extensively by Franken for his summary of controversies around this identification (Glueck 1945-1949, 347-350).

Franken remarked that although Glueck used his deep understanding of the topography of the Jordan Valley and its tells, he was limited archaeologically to surface survey data. His reasoning therefore was closely linked to a comparatively orthodox acceptance of the biblical traditions. Franken re-adjusted Glueck's claims, after having gathered 4 seasons worth of excavation information.

1. The Jabbok (now the Zerqa River) once ran to the north of the mound, shown by the river deposits in the lowest part of Trench D. These are the result of periodic flooding of the river, which kept depositing along the northern side of the mound until after the early Islamic period. The current bed of the Zerqa river is as such a recent development. It would be on the wrong side of the river for those who identify it with Succoth in Gad.
2. There appeared to not have been a permanent village until after the Iron Age I. During the Late Bronze Age, the site seemed reserved for a single large sanctuary, with no ordinary settlement of any kind. This makes the Jacob or Gideon stories unlikely, unless Succoth was not an ordinary village in these biblical times.
3. The mentions regarding the metallurgy in I Kings 7:46 were interpreted wrongly by Glueck. They should be interpreted as '*in the earthen foundries between Succoth and Zarethan*'. If the bronze casting activities from I Kings 7:46 were indeed performed in the earthen foundries between Succoth and Zarethan, and Tell Deir 'Alla was the location of these activities, it would place the site between the two aforementioned biblical places.

Due to the above, Franken was of the opinion that Deir 'Alla was not biblical Succoth. But he did offer his thoughts on another possibility, and one that Glueck did not feature in his list, being biblical Gilgal. Gilgal was the place the people from Jabesh Gilead went to proclaim Saul king after he had delivered them from the Ammonites (I Sam. 11:15). This was supposed to have happened in the Iron Age I, however, and Franken's sanctuary dates to the Late Bronze Age. However, Franken thought that Deir 'Alla might have persisted as a place of worship after the Late Bronze Age, but that a sanctuary was rebuilt after the fatal earthquake in a part of the mound not yet excavated, most likely to the east (Franken 1969, 21).

2.4 – Excavation strategy and methods

As mentioned above, Franken worked under Dame Kathleen Kenyon at the Jericho excavations, from 1955 until 1957. During this period Franken familiarised himself with the then state of the art Wheeler-Kenyon method, and saw its potential for excavations on mudbrick tell sites. The main principles of the Wheeler-Kenyon method included a focus on the systematic stratigraphic analysis of both architecture and relating deposits, which were excavated as smaller units, named 'Loc' - or as is the case at Tell Deir 'Alla - 'Features'. This method often involved the excavation in square trenches placed on a grid, leaving baulks between the individual excavation trenches. These baulks offered vertical sections of the already excavated deposits, used for the ongoing interpretation of the excavated stratigraphy. Excavated finds were collected and registered per feature, which were mapped onto detailed plans. This excavation and registration method had as benefit the improved definition of the stratigraphy, and a more accurate registration of the finds. Because of this attention to stratigraphy and find-contexts, this excavation method aligned with his ambitions to construct a robust pottery chronology for the possible changes from the Late Bronze Age to the Iron Age I.

Having the chronology as principle goal, an area for excavation was to be selected which would yield sufficient material, representative of the various stratigraphic phases dated to the Late Bronze Age and Iron Age I. Franken decided to select a part of the mound where he did not expect to find any *"aristocratic or military structures where the artefacts could be expected either to be rare, imported or for a specific purpose"* (Franken 1969, 11). Such finds would need more time, attention, and funding to excavate, and would significantly delay his primary goal. Most importantly, such structures would provide contexts with finds of *"specialized and limited use"* (Franken 1969, 12), rather than the daily wares useful for pottery chronologies. Also, he was keen to avoid too much damage to the site, keeping in mind possible larger scale excavation efforts in the future. As a result, Franken avoided the eastern summit of the mound, which he believed showed traces of more monumental structures, but chose the northern slope of the mound as the most suitable location to excavate.

2.4.1 – Excavation grid and squares

In line with the Wheeler-Kenyon method, a grid system was used for the Franken excavations at Tell Deir 'Alla. This grid system covered the entire site. The main datum line for the

excavation made use of a Jordanian Government survey point on the tell's summit, and ran across the summit of the mound in an East-West direction. The exact positioning of this grid system is detailed in Franken's 1969 publication (Franken 1969, 15). The Jordanian Government triangulation point was also used as the fixed point from which heights for plans and sections were taken.

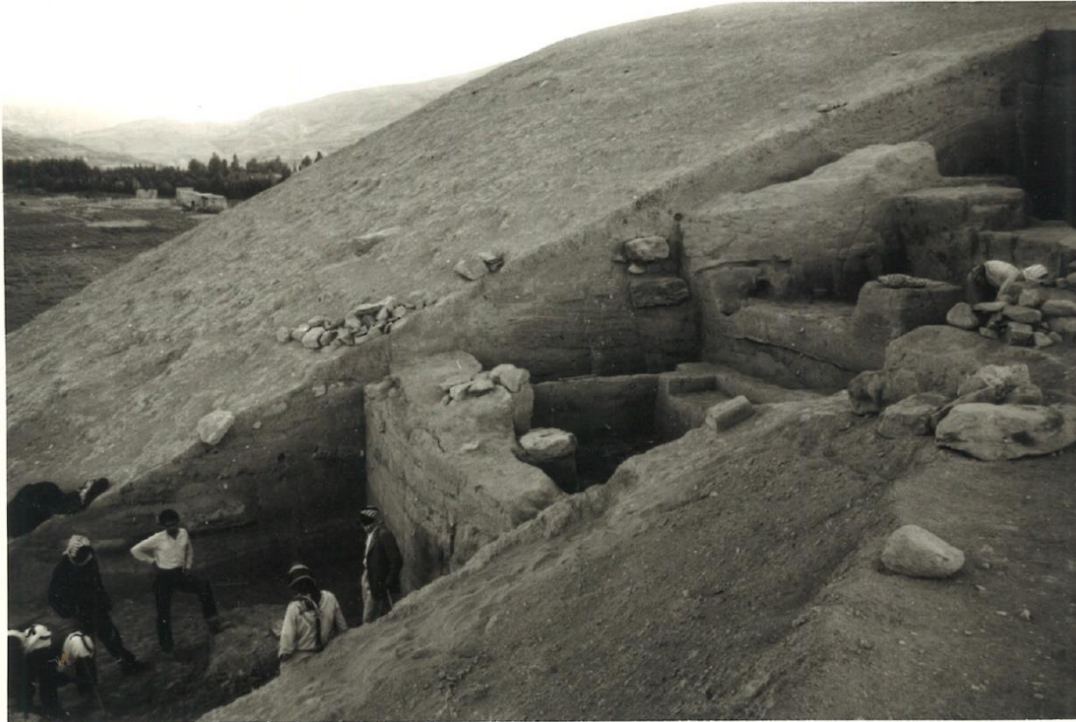


Figure 6: Excavating in Trench D, the 30-meter section trench, looking east (from the Tell Deir 'Alla archive).

Initially, for the purpose of these exploratory excavations an area of 30 by 30 meters was laid out on the grid, along a 30-meter line. This area was subsequently divided into 10 by 10 meter squares. These squares were named alphabetically, in order of excavation. Each individual square was then subdivided into 5 by 5 meter units, increasing the stratigraphic control of excavations. Each of these separate units, henceforth sub-squares, was given a series number, which allowed for precise data collection. For example, square A consisted of sub-squares A100, A200, A300, and A400. Per trench excavation of the 5 by 5 sub-squares proceeded from the top of the slope in a westward direction, stepwise down the slope towards the north (see figure 6). This had as benefit that no baulks were left between the sub-squares, which otherwise would create deep pits. Rather, prior to the excavation of each new trench to the west, the west section of the old trench would be carefully planned,

providing as Franken put it “*a walking baulk*” (Franken 1969, 12). An added benefit to this excavation strategy was that each terrace had an open northern end which greatly facilitated the removal of soil, and eliminated any safety issues related to high, and thus unstable, baulks.

As mentioned above, the objective of these initial excavations was not to have wide, horizontal exposure of habitation, but rather a ‘slice through time’ as it were, to provide a representative sample of material culture, pottery in particular, for chronological purposes. As such, the stepped approach along the slope facilitated this. As soon as sufficient material was collected, these higher levels could be abandoned. Excavation could continue in the step further down the slope, where older levels would have been reached. This would result in a series of relatively shallow terraces along the northern slope of the mound, and a representative assemblage of material from the sequence of occupation present at this part of the mound.

Initially Squares A to C were excavated, creating the first east-west oriented step. While these excavation trenches adhered to the above described configuration, Trench D deviated from this set. This trench was created to provide a north-south cross-section of the entire excavated area, together with Trench C. Initially, this Trench D was 6 meters wide, but later extended to the full 10 meters. Resultantly, Trench D was 20 by 10 meters, and with the east section of Trench C, provided a north-south section of the entire 30 meter stepped trench. Trenches were also extended north of Squares A and B. These new sub-squares were initially identified as belonging to trenches A and B (to be specific named A500, A600, B300 and B500). However, during the 1961 excavations the 5 meter extension of Trench A (A500, A600) was further excavated as F100 and F200. As a result, there is an overlap between Squares A and F, and both Squares A and B are larger than the originally intended 10 by 10 meters. Subsequently, the remaining part of the 30 by 30 grid was excavated further as Trenches E to G, and Trench L. Squares H and K were eastwards extensions, made in the 1962 excavation season (Franken 1969, 15). Letters I and J were not used for excavation squares. Unfortunately the rationale behind this decision is not clearly detailed in the 1969 publication. For other purposes, Franken does not make use of the letter I to avoid confusion with the Latin numeral for one (Franken 1969, 26). Possibly a similar reasoning is behind the omission of trenches I and J. In 1964 the original 30 by 30 meter excavation area was extended towards the north and east, to investigate a number of interesting Late Bronze Age structures touched upon in this area (Franken 1992). However, these extended areas, which

contain the Late Bronze Age sanctuary, are not within the scope of the present research. As such they will not be discussed in further detail.

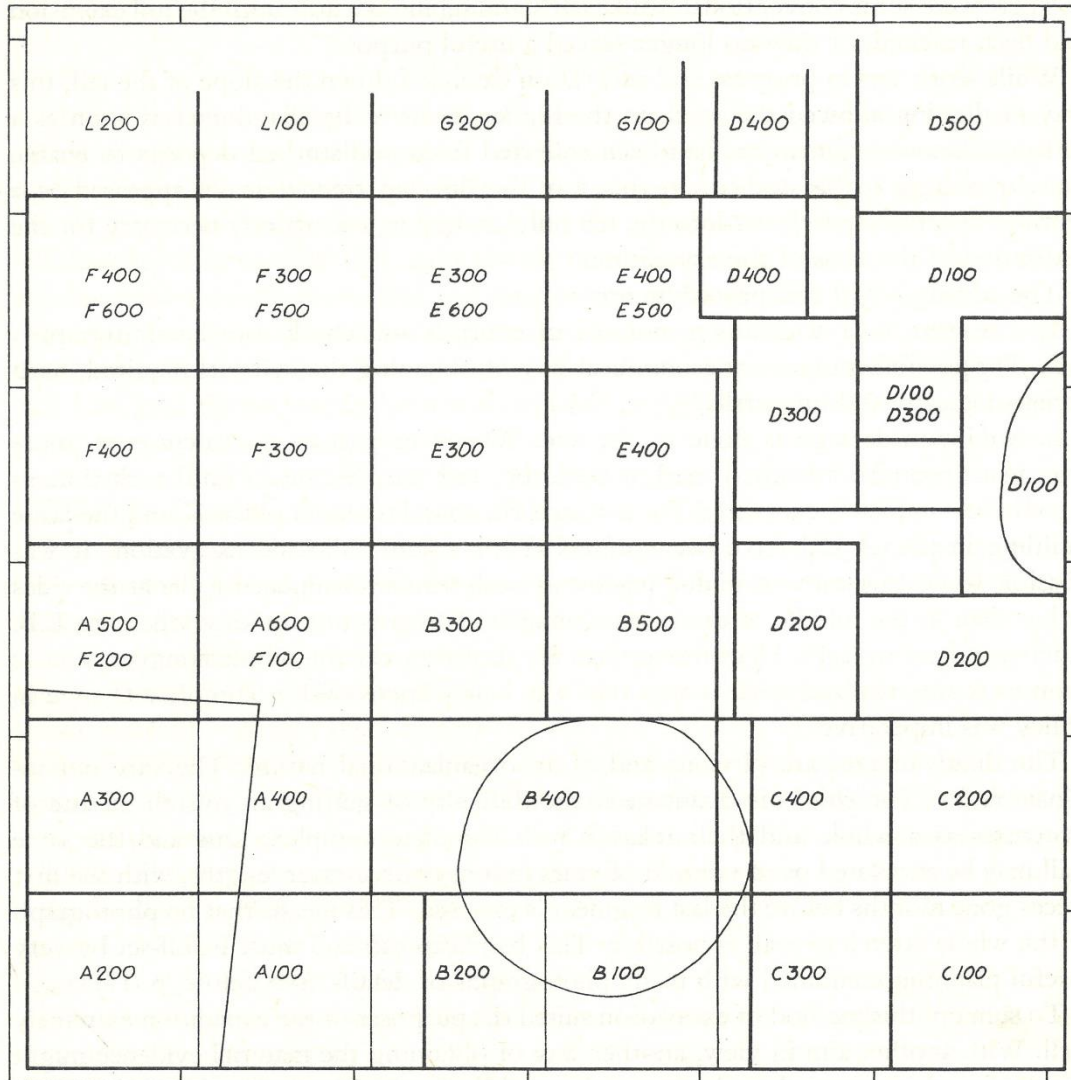


Figure 7: Layout of the trenches of the 1960s excavations at Tell Deir 'Alla (Franken 1969, 13).

The ideal excavation strategy outlined by Franken in both his main publications of these early seasons of excavation as well as his later work describing the Late Bronze Age sanctuary, appears not to have been followed in all cases. The resultant plan of the excavated area therefore has an overall planned, but somewhat cobbled together appearance (see figure 7), apparently due to idiosyncratic choices made in the field. Unfortunately, several of these diversions are detailed neither in the published works nor the original field documentation,

significantly complicating the understanding and systematic reinterpretation of the excavations in these areas.

2.4.2 – Field documentation

Each stratigraphic unit, such as soil deposits, pits or walls, was documented as a separate feature. Each received its own feature code, also referred to as a 'deposit number' (Franken 1992, 6). While topsoil would simply receive the name of the sub-square (for example A100), each following feature would receive an ascending number (for example A101, A102, A103). Both man-made structures and individual earth deposits were excavated separately and documented in this manner. Where possible individual floor layers were also excavated separately. However, in the case of finely laminated floors and in some cases sequences of thin soil deposits, this was not deemed practicable and instead a collective feature code was given. This was indicated through the addition of the letter S to the sub-square code. Features present in more than one sub-square received a separate number in each sub-square. These were then linked in the field book. The appearance of said features were recorded per square in a field notebook, detailing the feature and its relationship to the surrounding archaeology, and providing simple illustrative sketches. Furthermore, each feature was recorded three-dimensionally, through scaled drawings (sections and plans) provided with elevations. In addition to the field drawings and description in the field notebooks, black and white photographs were taken of the most important features. Usually excavation was paused until the photographs were developed. In certain cases this was not possible, resulting in the lack of high quality photographs for a number of features. Colour photos were only made on slides for educational purposes. In the later seasons pull-offs were successfully made of several sections.

Minor walls were excavated and drawn upon discovery. Significant earthquake damage was observed at the site, often affecting the visibility of walls greatly. As such, the original plans often proved rather misleading. The precise configuration of the walls was often only fully apparent after complete excavation and examination of the nearest baulks. No heights were taken of walls on the basis of Franken's assessment that the stratigraphic positioning of walls was not necessarily related to such measurements. As the broad exposure of architecture was not an objective of these early excavations, substantial structures, as well as the directly surrounding deposits would be left untouched for future systematic excavation. Conveniently, many of these substantial structures were found along the trench edges and

did not obstruct the digging of the terraces. However, the Late Bronze Age sanctuary proved to fall well within the excavation area, prompting a revised excavation strategy and extension of the trenches in 1964.

2.4.3 – Find documentation

Small finds, such as artefacts (including complete pottery vessels), flint, shells, bones, and botanical remains, were collected in the field and recorded. Pottery sherds and large stone objects were excluded from this find category. Small finds from each feature were provided a field registration number, which consisted of a lowercase letter following the feature code (for example A101a). No heights were taken of small finds. Rather, these were collected from, and in the documentation tied to, archaeological deposits of which the stratigraphic positioning can be derived from the section drawings. Selected botanical remains and animal bones were packed and shipped to the Netherlands for further research. At the excavation camp artefacts received serial numbers in addition to the field registration numbers. These numbers, as well as a description of the finds, including photographs and object drawings, were entered into the registration book. Additionally, a card system was filed for comparative purposes. Objects were then photographed and drawn (depending on the size of the artefact scale 1:1 or 2:1), and where needed restored. In consultation with the Department of Antiquities of Jordan it was decided which finds from the excavations were to be sent to Amman for storage or exhibition, and which to the Netherlands for further study. Entries describing where objects went were written in the registration book. Several objects from the 1960s excavations are still part of the permanent exhibition in the Archaeological Museum in Amman, others are in the Dutch National Museum of Antiquities, and the Faculty of Archaeology of Leiden University.

Pottery sherds which could not be pieced together into a recognizable vessel were collected in baskets relating to the features they originated from. As was the case for small finds, no elevations were taken of pottery sherds, but these were related to the archaeological deposits from which they derived. After sorting led by Franken himself, the diagnostic sherds were collected and marked with their serial numbers. These consisted of the abbreviation for Deir 'Alla, the sub-square indication, deposit code, and number of the individual sherd (for example DA/A101.1). These sherds together with their stratigraphic information formed the basis for the pottery chronology.



Figure 8: Refitting pottery vessels back at the excavation camp (from the Tell Deir 'Alla archive).

2.4.4 – Excavations at Tell Deir 'Alla after the 1960s

After Franken's 1967 excavation season, hostilities in the region forced the excavations to come to a temporary stop. The excavations were renewed as a joint expedition between Leiden University and the Department of Antiquities of Jordan in 1976 and 1978, led by Franken and Dr Mo'awiyah Ibrahim (Franken and Ibrahim 1978, 57). Due to the importance of the abovementioned Aramaic plaster texts found during the 1967 season, these excavations focussed on the Iron Age II period encountered on the tell's summit.

This focus on the Iron Age II contexts at Tell Deir 'Alla was continued by Franken's successor on Leiden University's behalf, Dr Gerrit Van der Kooij, who took over the excavations at Tell Deir 'Alla from 1979 onwards in co-directorship with Dr Mo'awiyah Ibrahim from the

Department of Antiquities of Jordan. From 1998 the Tell Deir 'Alla excavations became a co-directorship between Leiden University and the Yarmouk University, with Prof Zeidan Kafafi as co-director of the project. While these excavations focussed largely on the Iron Age II contexts on the tell's summit, several trenches were opened on the northern, eastern, and southern slopes of the site. These trenches yielded Late Bronze Age and Iron Age I remains, which will be discussed in chapter 4. The excavations at Tell Deir 'Alla came to a stop in 2008, marking almost 50 years of ongoing research at Tell Deir 'Alla.

2.5 – The 1960s Tell Deir 'Alla archive

An archaeological excavation creates a lot of data. This was no different in the 1960s than it is now, and as a result the Tell Deir 'Alla paper archive is quite substantial. The archive contains boxes of drawings, fieldnotes, photographs, and correspondence, as well as drafts and preparations for the Tell Deir 'Alla publications. All of the documentation that was generated during a field season, would be brought back to the Netherlands along with study material.

As outlined above, the excavations at Tell Deir 'Alla generated a large amount of documentation, all in paper format. Large section-drawings, object drawings, fieldnotes, photographs, registers, and also samples and artefacts were shipped in boxes from Jordan, to workspaces in Leiden University. These boxes made up what is currently the Tell Deir 'Alla archive.

Since the 1960s the archive was moved to different locations at least 5 times, as Franken's position within Leiden University changed, and the Faculty of Archaeology moved several times. Furthermore, the archive was continually used by Franken and his students. In short, the archive passed through many hands since the 1960s. This was detrimental to the quality of the archive, something which Franken mentioned already in his 1992 publication of the Late Bronze Age sanctuary (Franken 1992, 1). Documentation was lost, misplaced, and damaged. Many of the papers from the archive reflect this, showing tears, discoloration, blurring, and (attempted) repairs.

Over the years Franken's successor of the excavations at Tell Deir 'Alla, Dr Gerrit Van der Kooij, physically merged the 1960s archive into his excavation archive. This archive includes all the documentation from the excavations from 1976 onward. While formerly property of the Faculty of Archaeology of Leiden University, in 2013 the archaeological objects from the

1960s excavations were transferred to the custody of the Dutch National Museum of Antiquities in Leiden, under the supervision of the curator of the Near Eastern collection, Dr Lucas Petit. With these objects, the museum also received custodianship over Franken's excavation archive. While many of the objects are now transferred to the museum, the archive remains at the Faculty of Archaeology in Leiden, at the 'van Steenis' building. Dr Gerrit Van der Kooij uses the archive on loan for his publication of the excavated Iron Age II deposits at Tell Deir 'Alla.

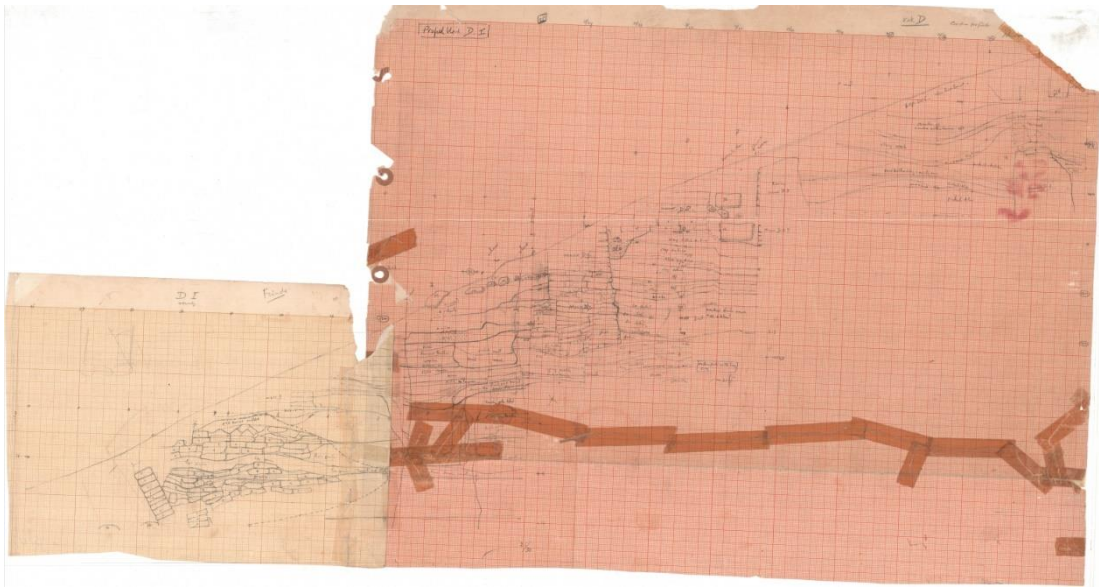


Figure 9: The 30-meter covering cross-section DI. Visible are signs of wear and tear (from the Tell Deir 'Alla archive).

2.5.1 – State of the archive

An essential goal of the current research was to establish how much of the 1960s excavation archive still remained at the Faculty of Archaeology at Leiden University, and to determine its state of conservation. Fortunately, Dr Gerrit Van der Kooij had an index of which boxes belonged to the 1960s excavations, and which belonged to the later excavations. A total of 8 cardboard boxes were identified as belonging to the 1960s excavations, as well as several binders with drawings. Another box was encountered containing material from Franken's earlier work on Indonesian festive pottery vessels. Excluding the latter, the various boxes and their content will be described below.

Binders

The majority of the section drawings and top-plans were kept in several large-size binders, and due to their poor state of conservation were kept at Dr Gerrit Van der Kooij's home. While these binders are named according to what was supposed to be their contents, over the years several of the papers found their way into other binders and boxes.

Binder 'Top-Plans'

This binder contains most of the remaining top-plan drawings from the 1960s excavations.

Binder 'Sections E-W'

This binder contains the various north and south section drawings, named here as east-west (for a south section), and west-east (for a north section).

Binder 'Sections N-S'

This binder contains the various east and west section drawings, named here as north-south (for a west section), and south-north (for an east section).

Binder 'Ottoman Burials'

This binder contains a collection of top-plan drawings of the Islamic cemetery, consisting of combined overviews of trenches, sub-squares, as well as individual burials.

Binder 'Misc.'

This binder contains a combination of items found in all the other binders, as well as numerous large object drawings.

Boxes

The boxes contain various aspects of the excavation archive. Their inventory is largely thematically organised, meaning that ideally most of the excavation photos will be in one box, fieldnotes in another, and object drawings in yet another. Unfortunately, this more often than not turned out not to be the case, and a box would for example contain mostly fieldnotes, but also excavation photographs, object drawings, and other documentation papers. The boxes are numbered according to Dr Gerrit Van der Kooij's system, and as such their numbers are not in a regular ascending order. Their inventory will be outlined below.

Box 1

Box 1 contains 32 different binders, containing mostly the fieldnotes and notebooks from different excavation seasons. However, the box also contained photographs, survey notes, pottery typologies, and drafts of the 1969 publication.

Box 4

Box 4 contains over 950 object drawings, mostly from Tell Deir 'Alla. There are several objects from nearby sites, such as Tell el-Mazar and Tell el-Khisas. It is unclear how these ended up in the Tell Deir 'Alla archive, but they might have been collected during trips to neighbouring sites.

Box 5

Box 5 contains over 880 object drawings, all from Tell Deir 'Alla.

Box 6

Box 6 contains the Tell Deir 'Alla artefact registers. There are 4 artefact registers, covering 2338 entries. In addition to the Tell Deir 'Alla registers, the box also contains the registers for the excavations at the nearby medieval tell, Tell Abu Gourdan.

Box 9

This box contains photographs of the texts on plaster from the Iron II period, as well as drawings of these texts. Furthermore, the box contains numerous drawings and figures for Franken's 1969 publication, as well as Hoftijzer and Van der Kooij's publication of the Tell Deir 'Alla texts (Hoftijzer and Van der Kooij, 1976).

Box 34

Box 34 contains various photographs of objects from the excavation, archaeological situations, and life in the village of Deir 'Alla. They were likely selected for an exhibition about Tell Deir 'Alla at the Dutch National Museum of Antiquities.

Box 38

Box 38 contains a mix of various items of documentation. It contains numerous object drawings, interpretations of stratigraphy, descriptions of thin-sections, pottery chronologies and typologies, and various pieces of preparatory work for the 1992 publication of the Late Bronze Age Sanctuary (Franken 1992).

Box 41

Box 41 contains field and object photographs, from all of Franken's excavation seasons at Tell Deir 'Alla.

2.5.2 – The archive's original outline

A first impression one gets when browsing through the Tell Deir 'Alla archive, is that it's in quite a poor state of conservation. In particular the large tears in many of the large drawings meant extreme care had to be taken when handling and studying them (see figure 9). Several of the boxes also contained small snippets from larger drawings, which had most likely fallen off, or were meant to be attached to larger drawings. As oftentimes no contextual information was written on these snippets, it was virtually impossible to retrace their original location.

Furthermore, the archive was disorganised. As mentioned above, documentation of all categories was intermixed throughout the various boxes and binders, making it hard to search for specific information within the archive. Despite these obvious faults, one could see at first glance the wealth of information in the numerous papers of documentation, much of it unpublished.

Most of the photographs were provided with a number, corresponding to numbers in the photo-registry. Drawings were marked with information regarding their exact spatial position, the fieldnotes detail thoughts and choices that were made in the field, and all artefacts can be traced back to their original deposit.

Having a clear picture of the contents of the boxes from the archive, the original structure of the documentation system could be reconstructed. The main categories of the encountered contents falls neatly in line with what Franken describes in his 1969 publication (Franken 1969, 15-19). This is outlined below.

Drawings

Field drawings

In the field drawings, consisting of section drawings and top-plans, were made to scale. These drawings were indeed encountered in the binders and boxes holding the archive. For both plans and sections this scale was 1:25, although several drawings were also made in 1:20. The drawings vary in size, as sometimes they encompass an excavation square, just a sub-square, or simply an archaeological feature or a fragment of a section. In other cases they are quite sizable, with the drawing of the 30 meter long section of Trench D (see figure 9) providing an obvious example.

As outlined in Franken's 1969 publication of the 1960s excavations, section drawings were made of every section created during the excavation. These drawings were unique per sub-square, and with each year of excavating the newly uncovered layers were added to the original drawings. The drawings are provided with information regarding the sub-square and which section is depicted in the drawing. Although these sections were published as having been drawn by Franken himself, often they bear the initials of the field supervisors. Presumably these individuals assisted him with this important task. Section drawings were made on large size graph-paper, with a pencil. Most are still very legible, although in a number of cases the lines have somewhat faded, or fragments were torn off.

In the archive it appears that the top-plans are significantly less numerous than the section drawings, and a clear strategy for when a top-plan would be drawn was not added to Franken's publication (Franken 1969). The top-plans usually show one or more excavated features, indicating a choice was made to produce a top-plan probably when a feature was clearly recognisable, interpretable, visible, an oftentimes fully excavated.

Object drawings

All objects were drawn on either a 1:1 or 2:1 scale. These object drawings were made in the excavation camp, by an official draughtsman. This often resulted in very large drawings of for example complete pottery vessels, or large grinding slabs. From the archive's content it is clear that not all objects were drawn, as for example animal bones and lithics are missing.

Photography

Field photography

Photographs were taken of archaeological features "of interest" (Franken 1969, 17) as soon as they were uncovered, and were linked with their description in the fieldnotes. What this description "of interest" exactly includes and excludes is unfortunately unclear. Most of the photographs appear to be overview photos on which sections or larger archaeological features are visible. Yet others also show detailed shots of smaller features. Photographs do not always contain a north-arrow or a photo-scale, making it difficult to retrace what is depicted when registry entries do not provide sufficient information.

Franken describes that the pictures were usually taken on a Linhof 13 X 18 plate-camera. While the plate was being developed work on the particular feature that was photographed would be halted pending the success of the photograph. For most of the 1960 season there

was no plate-camera, and a 'Miranda' camera was used instead. As this camera required the whole reel to be taken before processing the photographs, the decision was made to not halt work until the result of the photographs could be assessed. As a consequence, there are several cases where unsatisfactory photos remained undetected until development, and could not be retaken. These unsatisfactory photos are present in the archive and indeed, are less informative than ideal. However, the majority of the photographs are quite clear and provide a very useful addition to the drawn plans and written descriptions.

Find photography

While find photography is not described in the 1969 publication, the added plates in that volume indicate certain finds were photographed. The selection criteria seem to be based on diagnostic pottery vessels and small finds.

Fieldnotes

The archive contains notebooks, used for descriptions of the daily on-goings in the excavation squares. These notebooks are specified per excavation trench. Sometimes multiple squares are described with one individual notebook. For example, all the fieldnotes for sub-square D100 are in the notebook for D100, D500, D600 and D700, and the fieldnotes change often between D100 and D500 as the excavation progresses. These fieldnotes were written by the field supervisor per day on the excavation, and were continued in use over for various seasons. They are entirely written in Dutch. Each new feature was numbered in this notebook, described, and sometimes sketched on the graph-paper. The notes usually describe what areas were excavated, how much was excavated, what archaeological features were encountered, and what sorts of finds were excavated. Pottery or finds are sometimes provisionally dated. Occasionally thoughts, remarks, or references were added later, by the supervisor or by Franken himself. These could point for example to similar archaeological situations in different trenches, different numbers in sub-squares describing the same continuing feature, artefact numbers, or relevant top-plans or section drawings. The quality of the fieldnotes varies significantly between supervisors. While certain supervisors are more elaborate in their descriptions of archaeological deposits, others wrote entries such as "removed ca. 0.5 meter of deposit, same as yesterday". It is difficult to ascertain in these cases where excavation took place, how much soil was removed, and the stratigraphic origin of certain objects.

As mentioned, the fieldnotes also contain sketches of situations in the field. These sketches illustrate for example what work had been done in what area of the trench, features that were encountered, or artefacts. Often these sketches are the only visible horizontal documentation of certain deposits, as not many deposits were included in official top-plan drawings. These sketches vary in quality and often aren't drawn in any scale, simply indicating a rough area within the sub-square in which work was done.

Samples

Franken sampled an array of bio-archaeological material, which includes various charcoal and grain contexts, but also animal bones and shells. No human remains were found in the layers dating to the Iron Age I. After charcoal or other plant remains were lifted from their original contexts, they were sealed into plastic bags to be transported to the Netherlands for further analysis, including radiocarbon dating. Franken mentions that animal bones were cleaned, immersed in boiling paraffin wax for strengthening, and packed in plastic bags. This step in the process is relevant as such treatment would no longer be done at excavations, for this would render the animal bones unfit for bio-archaeological studies such as isotope analysis. With this knowledge no attempts for such analyses have to be made in the future, sparing disappointments arising from this significant contamination. While these samples were then sent to the Netherlands (Franken 1969, 18), they are not part of the archive in the boxes part of this investigation. The exact location of these samples is currently unclear, but it is likely that the plant remains are now part of the archaeobotanical collection at the University of Groningen, and the animal bones part of the reference collection of the Faculty of Archaeology at Leiden University.

Unexpected content

Several unexpected finds were also done within the archive. Alongside the many photographs of the archaeology, are numerous photographs of normal life in the village of Deir 'Alla in the 1960s (see figure 10), as well as of life in an archaeological excavation. For example, photographs have been made of the village buildings, the process of baking bread in an oven, getting water from a well, mud-brick buildings after it had rained, and surprisingly many of goats (see figure 11). Franken mentions in his 1969 publication that *"Photos of 'local colour' were made only when it seemed that a record of scenes or buildings or household installations was of such a nature that it could have a valuable bearing upon similar*

archaeological situations" (Franken 1969, 2). It seems, however, that the photographers took some personal liberties with this guideline. The photographic archive also contains pictures of having dinner in the excavation tent, the workplace of the draughtsman, Franken sorting the pottery assemblage, the workmen getting paid, and a visit of King Hussein of Jordan to the Jordan Valley in a military procession. These photographs also contain family portraits of the villagers of Deir 'Alla during the 1960s.

As the modern village of Deir 'Alla still houses several families that have lived there for generations, during a recent visit to the site in October 2018 a number of these pictures were shown to one of the older ladies from the village. From the first picture she looked at, she immediately recognised her grandmother, mother, and uncle. This illustrates that these photographs are, other than their insights into the workings of the Tell Deir 'Alla excavations, also important records for the local history of the people of the Jordan Valley, and give a glimpse into what life was like in the recent past. They could be useful in heritage related studies, as well as community-based archaeology. Not unimportantly, they may also be of sentimental value to the current-day community of Deir 'Alla.

Another chance find the archive yielded, was a box of metal samples. While Franken makes no mention in his 1969 publication or in his documentation that such samples were collected, Dr Gerrit Van der Kooij remembered that a box with metal samples existed, and found it within his own archive. The box, labelled 'samples Rothenberg', contains metal samples from most every excavated phase. The box was apparently meant to go to Prof Beno Rothenberg for analysis, but never made it to him. These metal samples will be further discussed in chapter 4.



Figure 10: Life in the village of Deir 'Alla (from the Tell Deir 'Alla archive).



Figure 11: Goats on the tell (from the Tell Deir 'Alla archive).

2.5.3 – Digitisation process

One of the most profound and important challenges of working with this archive was to disentangle the very disorganised archive and safeguard its fragile state from further decay. It was decided that the only way to do this was to digitise the archive in its entirety, and shape it into a workable database. The author and Dr Gerrit Van der Kooij decided to approach the Faculty of Archaeology regarding this challenging issue, and consulted with the Department of Digital Archaeology.

In recent years more awareness is being raised on the issue of ‘endangered archives’ (e.g. the ‘Endangered Archives Programme’ by the British Library), of which the Tell Deir ‘Alla archive is certainly one. As a result, there are now various institutions that argue for digital safekeeping of such archives in ‘digital repositories’ in which documentation can safely be stored for the future. The Department of Digital Archaeology of the Faculty of Archaeology, Leiden University, was already in touch with one such repository. This Dutch institution, called the ‘Data Archiving and Networked Services’ (DANS), provides storage space for digitised archives, maintains the files in a durable format, and provides permanent accessibility of the deposited files. Certain software and applications may come into disuse after a while, and as a result files might not be able to be opened anymore. DANS aims to avoid such situations by constantly evaluating its file, format, and storage use, and thus guarantees the safeguarding of the archaeological data sets for future generations.

Storing the Tell Deir ‘Alla archive on such a platform was made possible by the Faculty of Archaeology in Leiden. This did however require that the entire archive had to be digitised first. A team comprising Dr Gerrit Van der Kooij, the author, and two data-assistants (generously funded by DANS) initiated the digitisation of the 1960s Tell Deir ‘Alla archive in May of 2017.

The digitisation process proved a substantial endeavour, which was completed over a period of several months. Full-sized, high-resolution scans were made of every page of documentation. Photographs, which often contained descriptions on the back, were scanned on both sides. As many of the sections, top-plans and object drawings were too large for regular scanners, they had to be scanned in a wide format Colortrek SmartLF SC scanner. These large format drawings had to be placed in a protectionary plastic sheet before being scanned, as the scanner might have damaged the drawings. These different techniques and steps were time-consuming and proved arduous at times (see figure 12).

2.5.4 – Digitisation results

The digitisation process resulted in the Tell Deir 'Alla archive now being completely available in digital format. It measures ca. 110 GB, and contains around 6000 separate files. These files comprise all of Franken's 1960s excavation seasons at Tell Deir 'Alla and as such hold not only the Iron Age I data, but also the Late Bronze Age, and the Iron Age II.

The crucial next step was the construction of an accessible database containing the large number of files. This would make the excavation archive much more easily accessible, facilitating the search of for example data from an individual trench, sub-square, archaeological period, and excavation year. This meant that all of the roughly 6000 separate files had to be renamed, in order to reflect what the file actually contains. This enormously time-consuming process was largely completed over the course of this research. All of the files now have a name which, where possible, clarify information of the data stored within. This was done in accordance to the digital format as required by the DANS repository, in order to maintain a consistent and easily transferrable file structure.

This strenuous work did clarify what exactly the archive contains, and consequentially also what might be missing. For example, the number of top-plans within the archive is quite low, and the majority of them don't contain measurements and find locations. Furthermore, there appears no record for many of the artefacts which did not receive a separate 'artefact number' for the register, such as the lithics, shells, animal bones, charcoal, and grains. This process forced the author to accept the limitations of working with such an old and weathered archive, while at the same time maximising what was still possible with the enormous amount of information within it. After this was completed, familiarising with the documentation system could start.

As is often the case, not all crucial evidence relating to the site and its excavation was written in ink, but rather was stored in the minds of the excavators. However, by utilising and making accessible what does remain in paper archives such as the Tell Deir 'Alla archive, we can make sure excavations were not in vain, more valuable data doesn't get lost, and we do right by the archaeological heritage from this fascinating region. This archive will become open-access upon the completion of this thesis, for safekeeping and further use by generations of archaeologists interested in the archaeology of the end of the Late Bronze Age and the Iron Age I, the archaeology of the Middle East, or even the history of archaeological excavations.

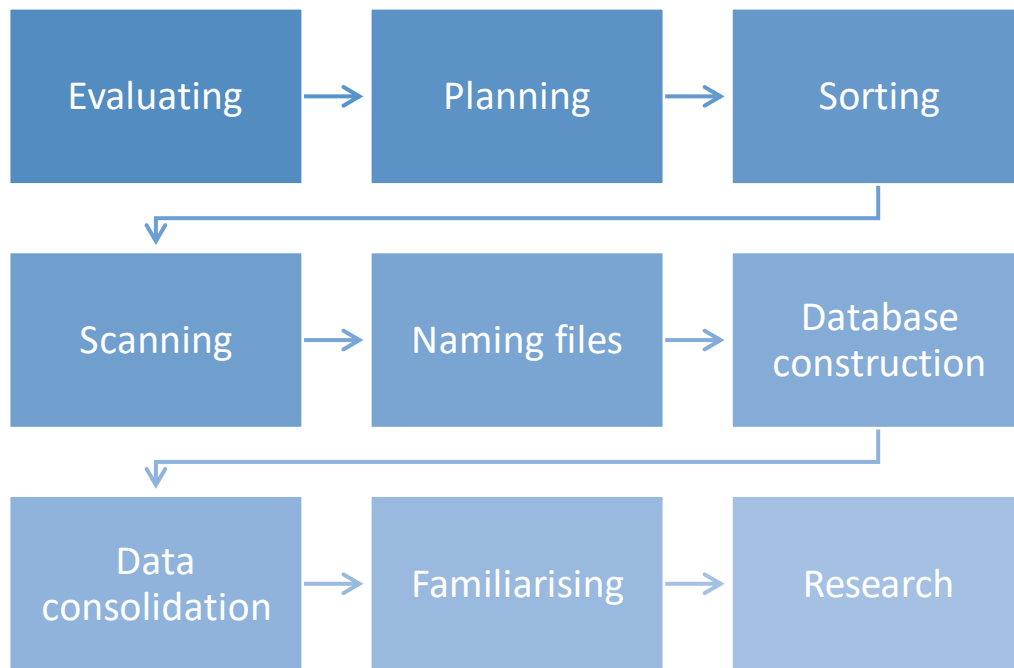


Figure 12: Flowchart of the various phases of the digitisation process, including the subsequent research.

Chapter 3 – Regional background for the 12th century BCE

“As the network ballooned, ever larger gaps appeared in the web of royal reach (...), and within these, different kinds of people began to flourish” (Broodbank 2015, 469).

3.1 – The Iron Age I

The Iron Age I is a period that is not well understood in the Southern Levant. It follows a chaotic period, commonly known as the Late Bronze Age collapse (ca. 1200-1130 BCE). What, or who, exactly caused the onset of this brief but turbulent period is still a matter of debate, but the results are clear. Numerous cities across the Levant are destroyed within a short time frame, as is attested by archaeologically traceable destruction layers: *“Within a period of forty to fifty years at the end of the thirteenth and the beginning of the twelfth century almost every significant city in the eastern Mediterranean world was destroyed, many of them never to be occupied again”* (Drews 1993, 4). Major sites which are destroyed during this period are for example Emar, Ras Bassit, Ras Ibn Hani, and Tell Tweini (Cline 2014, 112-113). The events comprising the Late Bronze Age collapse resulted in the demise of the Mycenaean palace system, the decline of both the Late Bronze Age Egyptian and Hittite Empires, and the loss of an intricate economic, political, and culturally connected system of networks (Killebrew 2014, 595). This series of cataclysmic events was traditionally seen as the end of an ‘Age of Internationalism’, of the ‘heroism’ portrayed in the Iliad, and has been interpreted to have resulted in the displacement of large groups of peoples (Ibid.).

The successive Iron Age I is traditionally regarded as a period of ‘dark ages’, lasting for several centuries (Sandars 1978; Wood 1996, 210-259). In this period a shift appears to have taken place from the complex and interconnected palatial systems of the Late Bronze Age to small and isolated village structures. However, the Iron Age I has only recently become understood to be more than only a period of demise, but also a period *“characterized by multidirectional cultural and socio-economic interconnections that preceded and coincided with a more*

protracted demise of the Bronze Age" (Killebrew 2014, 595). Furthermore, this period saw significant societal and political reconfiguration, which is expressed in smaller-scale connectivity, rather than adhering to the preceding Late Bronze Age internationalism (Bloch-Smith and Alpert Nakhai 1999, 115). These changes eventually resulted in the formation of local polities in the Iron Age II Southern Levant, such as the kingdoms of Ammon, Edom, Israel, Judah, and Moab. This reconfiguration allowed for new traditions to be developed, old ones to be reinterpreted, new trade routes to be connected, and new opportunities to be grasped. This period at the turn of the Late Bronze Age and Iron Age I falls largely in the 12th century BCE.

3.1.1 – The Iron Age I in the Southern Levant

Following the Late Bronze Age collapse, the Southern Levant appears to have gone through a hectic period, which included the abandonment of sites, changes in material culture, and interruptions in trade relations. This period in turn was followed by a period of reconfiguration, rebuilding, and at certain sites also continuation of older traditions, all falling roughly in the 12th-10th century BCE. While all of these general patterns have been attested in the archaeological record on both sides of the Jordan River, for the area east of the Jordan River, henceforth referred to as Transjordan, much less is known about this tumultuous period. The number of excavations on sites with Iron Age I levels in this area remains significantly lower than in Cisjordan. Larry Herr states in his exploration of the Iron Age I in Transjordan, that many sites in this region have most likely even been mistakenly identified as Iron Age I. Several older excavations and surveys tended to misidentify pottery as Iron Age I, when it was actually Iron Age II (Herr 2014, 650). Of the sites which have been excavated, a staggering number remains (largely) unpublished, often only accessible through small numbers of preliminary reports describing what was done during the different seasons of excavations. This makes any comprehensive studies on Iron Age I settlement dynamics, socio-political changes, and changes in material culture a difficult endeavour.

Endeavours have been made, however, such as in Bruce Routledge's book on the archaeology of Moab, Eveline Van der Steen's book on the Iron Age I in the Jordan Valley, and Larry Herr's chapter on Iron Age I Transjordan (Routledge 2004; Van der Steen 2004; Herr 2014). Combining the results from these studies on Iron Age I Transjordan, in addition to Ayelet Gilboa's synthesis of the Iron Age I period in Cisjordan (Gilboa 2014, 625-626), the following model could be proposed for the Iron Age I Southern Levant.

1. During the Iron Age I the Southern Levant becomes free of external domination, as the chaos of the Late Bronze Age collapse resulted in the retreat of the two main imperial powers of the time: Egypt, and to a lesser extent the Hittites. This 'power vacuum' allowed for new societal and political configurations, which in the various regions of the Southern Levant take different forms.
2. Contact between Cisjordan and the Aegean and beyond nearly ceased altogether, contact with Cyprus and Egypt decreased significantly. Interregional trade, while formerly 'state administered', assumes a new and less centralised form. In settlements a larger focus emerges on the "modular repetition of pillared houses" (Routledge 2004, 89), which is seen as indicative of a larger focus on the village and (nuclear) family (e.g. Stager 1985, 20).
3. Bronze production was still crucial, but the Cyprus and the Egyptian Timna mines were severely weakened. This gap was likely filled by mining enterprises in the Wadi Faynan copper mines, through local initiatives.
4. A settlement shift from lowland to highland areas is witnessed throughout the Southern Levant, together with an influx of new peoples that had been displaced by the turmoil of the Late Bronze Age collapse. Furthermore, there is an increase in site density compared to the Late Bronze Age, but not necessarily in site dimensions.

3.1.2 – The Jordan Valley in the Iron Age I

The Jordan Valley itself, which forms the regional setting for the site of Tell Deir 'Alla, shows most of the features described above associated with the 12th century BCE. There are sites that are abandoned, resettled, or destroyed. As this thesis' aim is to explore this period specifically from the perspective of Tell Deir 'Alla, the following chapter will provide a focussed overview of the archaeological evidence pertaining to the 12th century BCE in this region.

The Jordan Valley, which as mentioned in chapter 2 will cover the area from the southern end of the Sea of Galilee to the confluence of the Jordan and Zerqa Rivers, is mentioned as both the exception to and the rule of the larger narratives about the Late Bronze Age to Iron Age I. Contradictory statements about the character of the Jordan Valley in this period are numerous. Iron Age I sites in the Jordan Valley are, sometimes within the same volume, referred to as both "*no more than the poor habitations of pastoralists and accompanying animal pens*" (Gilboa 2014, 642) as well as seeming "*to reflect a more prosperous lifestyle*

and [containing] a material culture that is oriented more toward the west than sites on the plateau" (Herr 2014, 649). This creates a confusing narrative, entirely dependent on which perspective is chosen for the specific passage.

In order to disentangle this confusing picture, a brief overview will be provided of the evidence gleaned from the archaeological record, which includes various survey projects that provide evidence for the settlement patterns of the Iron Age I in the Jordan Valley, as well as various archaeological excavations of sites with Iron Age I habitation layers.

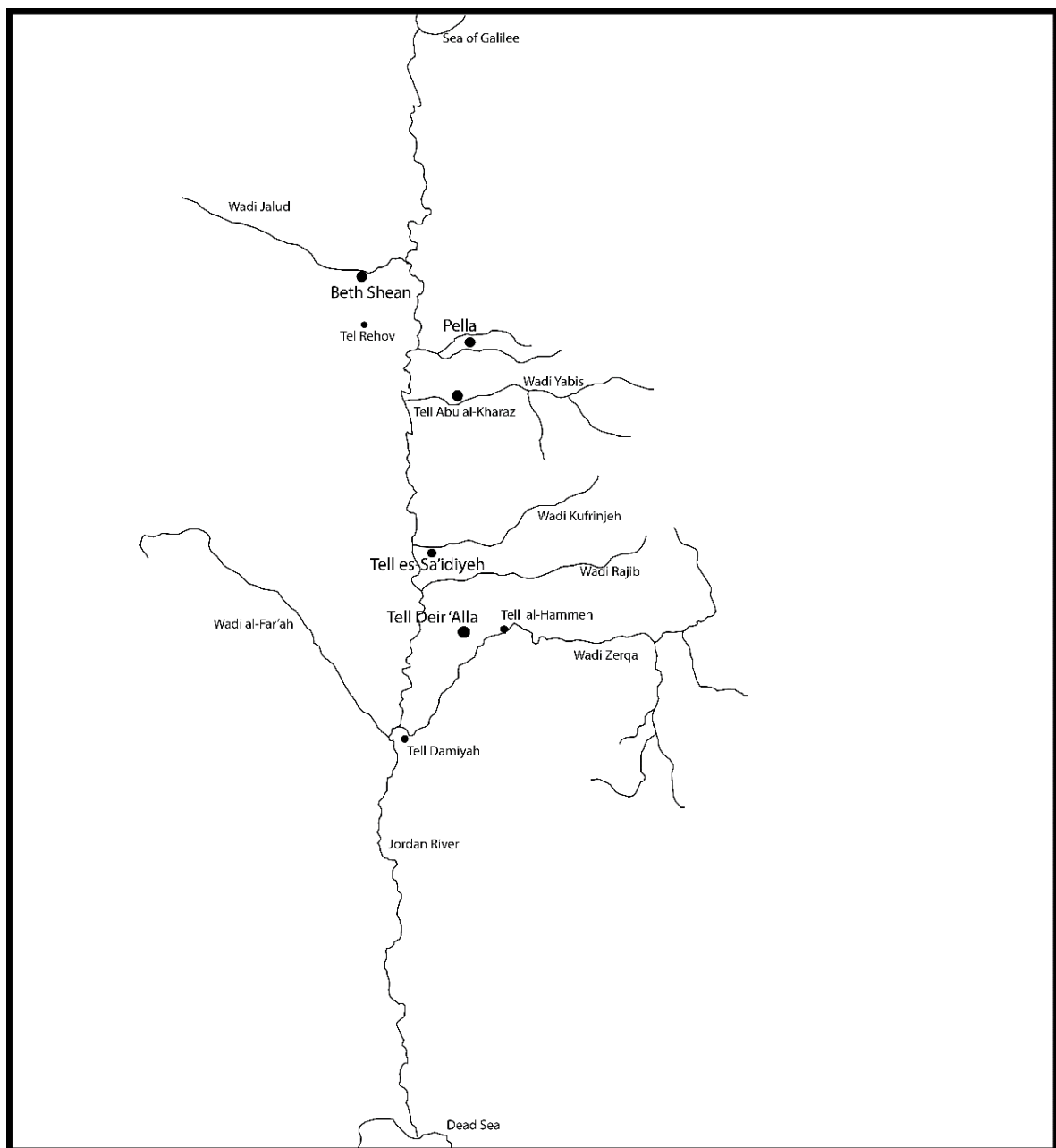


Figure 13: Map of Iron Age sites discussed in this chapter (after Van der Steen 1999, 179).

Survey results

While typically travel reports from the Middle East are associated with 19th century travellers from the West, the Jordan Valley was already frequented and written about from at least as early as Idrisi (1154 CE), Yakut (1225 CE), and Ibn-Batuta (1326 CE) (Le Strange 1890, 31; Gibb 1958, 82-83). The first historical investigations of this area done by the 19th century Western travellers were usually focused on the identification of biblical sites (for a comprehensive list of all travellers' reports and surveys regarding the Jordan Valley, see Kaptijn 2009b).

The first wave of trained archaeologists who began identifying archaeological phenomena in the region, including Albright (1924-1925) and Glueck (1945-1949), began observing that a number of important changes in settlement patterns could be identified for the end of the Late Bronze Age and the beginning of the Iron Age I. Albright, for example, describes that the Jordan Valley must have been the first part of Palestine to be heavily developed, despite the heat and "*mosquito-breeding swamps*" (Albright 1924-1925, 67). He noticed that the amount of Late Bronze Age sites in the Jordan Valley was significantly higher than in the hills, and remarks that most of them were abandoned in the Iron Age I, except for Tell Deir 'Alla (which he calls 'Succoth' in his publication) (Ibid., 68). A similar pattern is discussed by Glueck, who argues on the basis of his thorough survey of the Jordan Valley, that the Jordan Valley was not only one of the first settled areas (by which he meant urban settlements of the Bronze Age) of the Southern Levant, but also one of the richest parts of the entire area. He noted that 30 Iron Age I-II settlements were encountered in the area between the southern end of the Sea of Galilee, and the confluence of the Jordan and Zerqa Rivers (Glueck 1945-1949, 335).

While these important early archaeological surveys provided the foundations for the understanding of this period in the Jordan Valley, in more recent years additional large-scale surveys and the subsequent systematic reinterpretation of the existing survey data have allowed for the refinement of this image, such as the East Jordan Valley Survey (Ibrahim *et al.* 1976), and Eveline Van der Steen's survey during the 'Deir 'Alla Regional Project' (Ibrahim and Van der Kooij 1997; Van der Steen 2004).

The important work by Eveline Van der Steen, combining excavation and survey data of the Jordan Valley (e.g. Van der Steen 1996, 53), produced a picture which shows an increase in Iron Age I sites in comparison to the Late Bronze Age, especially in the Central Jordan Valley. However, the amount of Late Bronze Age sites in this area was already much larger than

expected in comparison with other regions (Van der Steen 2004, 101). Additionally, her research identified patterns in the preferential location of Iron Age I sites in this region. Whereas the Late Bronze Age sites are found spread throughout the *ghor* area, the Iron Age I sites are most often located near a water source such as wadi's. As such, many Iron Age I sites are located along the Zerqa River, resulting in a higher density of sites located in the Central Jordan Valley in comparison to the surrounding areas, in particular the regions north of Tell es-Sa'idiyeh, and south of Tell Damiyah (Ibid.).

This picture is later substantiated by Eva Kaptijn's survey results from the large-scale 'Settling the Steppe' project (Kaptijn 2009b). This project focussed on creating a diachronic perspective of settlement strategies in the Central Jordan Valley, and like Van der Steen's work, shows that the Central Jordan Valley has the highest settlement density of Iron Age I sites in the entire Jordan Valley (Kaptijn 2014, 27). The increase is substantiated with a graph combining both site numbers and settlement density. There is an increase from 26 Late Bronze Age sites, to 37 Iron Age I sites, of which the densest cluster is in the Central Jordan Valley. Another interesting observation stemming from this project, was her theory that larger investments in irrigation strategies likely began somewhere during the Iron Age (Kaptijn 2009b, 410). This allowed for a higher percentage of crop yields, which might have resulted in population growth and subsequently more permanent settlements in the area. Unfortunately her survey conclusions don't differentiate between Iron Age I and Iron Age II, which might narrow this process down further.

Finally, a targeted site survey at several sites in the Central Jordan Valley was conducted by Lucas Petit (Petit 2009). This survey conducted targeted excavations for known Iron Age II sites, in order to gain a better understanding of the settlement dynamics of this period. This project succeeded in the identification of a process of oscillation of habitation at numerous sites, with rapid abandonment and resettling being the norm rather than the exception. Importantly, he observed that the Jordan Valley could be seen as a 'high risk, high reward' area, where the inhabitants had to maintain a manner of flexibility in their subsistence strategies in case of sudden internal or external threats. Petit postulates that this meant maintaining a communication network with the inhabitants of the highland areas, to have a place to fall back on when in need (Petit 2009, 229). While his study focussed on the Iron Age II, this model should be kept in mind for the study of the Iron Age I period, as during this period similar situations might have forced rapid changes in subsistence strategies for the inhabitants of the Central Jordan Valley.

In conclusion, the survey results of this area provide a picture of both change and continuity between the Late Bronze age and the following Iron Age I period. It is suggested that an increase in site density can be witnessed for this period, with a clear locational preference. These observations are particularly important with the political reconfiguration of the Iron Age I in mind, and provide a general, but essential framework in which to interpret the archaeological evidence deriving from the excavation of sites dated to this complex period in the history of the Jordan Valley and surrounding areas.

Excavations of Iron Age I layers

While surveys have indicated the presence of a large number of Iron Age I sites in Trans-Jordan, not much is known about the habitation at these sites. As mentioned above, in comparison to Cisjordan, excavations of Iron Age I layers in Transjordan are still quite rare. This holds true for the Jordan Valley, despite numerous long-term excavation projects in this region. These projects tended to focus on the Late Bronze Age or the Iron Age II, due to the picture of the Iron Age I being 'dark ages'. Seen as a period of decline, Iron Age I occupation often fell between the cracks. Nonetheless, at a modest number of sites layers dating to this period were excavated, giving us some more insights into the material culture and habitation in this period. With the published data several conclusions can be drawn about the Iron Age I in the Jordan Valley.

Of the 37 Jordan Valley sites identified as having habitation dating to the Iron Age I, only roughly 8 published excavations have touched upon those layers thus far. These most notably include Tell Deir 'Alla, Tell el-Mazar, Tell es-Sa'idiyeh, Tell al-Hammeh, Tell Abu al-Kharaz, Beth Shean, Pella, and Tel Rehov. The most extensively excavated, and published, of these is Beth Shean, where substantial architecture has been uncovered. This site gives evidence of the presence of a large Egyptian garrison town at the site, during the 12th century BCE. It is estimated to have had a modest, but substantial community, with extraordinary richness portrayed in the Egyptian-style public buildings. The material found at this site reflects an ongoing engagement with Egypt, as well as an abundance of local Canaanite traditions. This is indicative of continuity of tradition, where not much changes throughout the 12th century. While several sites show similar patterns of continuation, such as Tel Rehov and to a lesser extent Tell al-Hammeh, Tell Deir 'Alla shows a highly different pattern. At this site the substantial Late Bronze Age sanctuary was destroyed in the first half of the 12th century, after which the site was briefly abandoned. It was then resettled, arguably by 'newcomers'

(Franken 1969, 20-21) who came from a different area than the Jordan Valley. The layers belonging to these phases are associated with evidence for metalworking. This pattern of abandonment and resettling shows similarities with other sites, such as Tell Abu al-Kharaz. Particularly in the change in material culture do these similarities emerge, which could be a signal of the reconfiguration of interregional contacts mentioned above. The picture that emerges from the brief outline mentioned above, largely shows that two broad categories of characteristics can be discerned for the Iron Age I in the Jordan Valley, being that of abandonment, destruction, and resettlement, or 'change' in short, as opposed to continuation of local traditions. A third category will be added, being excavated Iron Age I sites with lack of or problematic data. Below a number of the main observations are discussed in more detail.

Date BCE	Transjordan				Cisjordan		
	Tell Deir 'Alla	Tell es-Sa'idiyeh	Tell Abu al-Kharaz	Pella	Beth Shean	Tel Rehov	
1300	Phase B-E LB II	Stratum XIII LB II	Phase VII LB IC-II	Phase III LB II	Level VII LB IIB	D-9b, D9a, D8 LB IIB	
1200	Phase G-H LB II End	Stratum XII IA I	Lacuna LB II	Phase II LB II	Level VI IA IA	D-7, D-6, D-5 IA IA	
	Phase A-D IA FP	Lacuna (Stratum XIB)		Phase O IA I	Level V		
1100	Phase E-K IA SP		Phase IX IA IB	Stratum IX IA I	IA IB	Stratum VII IA IB	
1000		Stratum XIA IA I	Phase X				
		Stratum X IA II	IA IB/(IIA)	Stratum VIII IA II	Level IV IA IIA	Stratum V IA IIA	

FP = First Period LB = Late Bronze
SP = Second Period IA = Iron Age

Table 2: List of discussed archaeological sites with relevant phases as published, with corresponding dates BCE.

Abandonment, destruction, and resettlement: change

Several sites in the Jordan Valley appear to be abandoned, or have been abandoned, and subsequently resettled in the period of the 12th century BCE. Clear evidence for this pattern is attested at Tell Deir 'Alla. During the Late Bronze Age Tell Deir 'Alla housed an extraordinarily substantial religious structure, or sanctuary. This sanctuary had been built already during the Middle Bronze Age, on an artificially levelled platform. It consisted of a central cella, which functioned as the 'holy of holies' of the sanctuary, and was flanked by several store-rooms which contained ceremonial and functional pottery, of both local and imported Aegean origin, imported objects such as cylinder seals, and inscribed tablets. The sanctuary's architecture shows features of Egyptian building characteristics, comparable to the Fosse Temple at Lachish (Franken 1961, 365). Based on these characteristics, it was postulated that the sanctuary possibly functioned as a hub for a regional market-economy

(Franken 1992, 178), trading between the Jordan Valley, Egypt, and possibly Syria and Lebanon. Somewhere after 1180 BCE the temple was destroyed most likely by an earthquake. The specific date was attested by the *terminus post quem* provided by a cartouche of Queen Taousert from the latest layers of the temple. This destruction event is witnessed in a clearly recognisable destruction layer, with mud-bricks burnt to a degree of vitrification (Franken 1961, 367). This event did not cause the inhabitants to abandon the site immediately, however, as it is apparent from the archaeological record that attempts were made to rebuild parts of the sanctuary, and possibly salvage some of the temple's inventory (Franken 1969, 20). Another fire resulted in the end of this phase, and the site was briefly abandoned. However, this abandonment phase did not last long, as on top of the debris from the Late Bronze Age sanctuary a series of industrial installations were built. Franken suggests that this was done by a group of newcomers, as mentioned above, largely on the basis of a new pottery repertoire unlike that of the Late Bronze Age inhabitants (Franken 1969, 20-21). These phases, Franken's Phases A-D, fall somewhere in the second half of the 12th century BCE. These phases have been published, but largely limited to the analysis of the pottery chronology (Franken 1969).

At Pella there is a similar situation as seen at Tell Deir 'Alla, namely destruction and resettlement, but not abandonment. Pella, or Tabaqat Fahl, is a 30-meter-high mound located at the edge of the eastern foothills of the Jordan Valley. It hosted very substantial Middle to Late Bronze Age city, which is mentioned in the Amarna letters. Excavations at the site yielded multi-roomed Late Bronze Age, Pella Phase IA, domestic structures, a multi-roomed courtyard building, as well as a 'Governor's Residence', an administrative/palatial residence of significant size (Bourke 1997, 108). Finds from these buildings include imported Aegean pottery, lapis lazuli, and cuneiform tablets, indicative of long-distance trade. Furthermore, a stone-built Migdol Temple was excavated measuring around 35 x 20 meters, making it one of the largest such temples in the Southern Levant (Bourke and da Costa in Egan and Bikai 1999, 495). Finds from this temple include ivory and faience furniture inlays, faience, carnelian, and lapis lazuli beads, a bronze spearhead, and a ritual ceramic bowl (Ibid.). It was likely constructed around 1450 BCE, and continually used until its destruction in the 9th century BCE, although its shape changed significantly over time. To the west of this substantial temple was another large building, with heavy walls made from mud-brick. This building, postulated to have been constructed around 1300 BCE, contained numerous storage jars, cooking vessels, and drinking vessels, leading the excavators to assume it was a public building, possibly for the Iron Age rulers of the town. It was most likely destroyed

around 850 BCE. While these large buildings appear to have been used continuously throughout the Late Bronze Age and Iron Age I, this did not happen without incident. The entire excavated area is marked by an “extensive fiery destruction” dating to the 12th century BCE, Pella Phase O (Bourke 1997, 110). While Pella does not seem to have been abandoned after this heavy conflagration, the quality of attempted repairs at the site indicate it had significantly declined in its critical faculties, and is left a fairly modest village. Interestingly, one of the buildings from this phase contained a foundation deposit of six ‘lamp and bowls’, a pottery vessel typical for the 12th century BCE (Ibid., 113). Pella is still awaiting a final comprehensive publication, so unfortunately one must err on the side of caution with most of the published contexts.

Another site which does have evidence for abandonment, is Tell Abu al-Kharaz. This site, located just north of the perennial Wadi al-Yabis, appears to have been continuously occupied from the Early Bronze Age throughout the Late Bronze Age, during which there was a large fortified city. Then, from the Late Bronze Age to the late Iron Age I, there was a sudden break in the site’s occupation. This lacuna is postulated to have been caused by a destruction event, but the precise dating of this event is not without complications. While the final Bronze Age phase, Tell Abu al-Kharaz phase VIII, is known to start around 1350 BCE, the exact end of this phase is unknown due to disturbances in the stratigraphy by later Iron Age occupation. As such, dating the destruction layer causing the lacuna is difficult. However, it is clear that the site wasn’t occupied again until the late Iron Age I, around 1100 BCE (Fischer and Bürge 2013b, 309). Although the precise dating remains an issue, there is a clear occupational gap during the 12th century BCE, the period in which both Tell Deir ‘Alla and Pella are destroyed and subsequently resettled. Tell Abu al-Kharaz is well published, with comprehensive final publications on the Early- and Late Bronze Age and Iron Age layers (Fischer 2006; Fischer 2008; Fischer, 2014).

While not entirely fitting with the sites described above, the Tell es-Sa’idiyeh cemetery shows evidence for change in a different way. Tell es-Sa’idiyeh is a substantial tell site to the northwest of Tell Deir ‘Alla, and at only 1.8 km from the Jordan River, close to the *katar*. It rises some 40 meters above the surface, and consists of an upper and a lower mound. On the lower mound an impressive cemetery was encountered, yielding around 500 individually numbered burial installations (Green 2013, 420). These date from the Late Bronze Age to the end of the Iron Age I. These burials show evidence of local burial customs (consisting of rectangular or oval pits sometimes lined with mud-bricks), as well as burials in ceramic jars (single jars with interred children and double-pithos burials containing adults). Interestingly,

the latter of these burials, and only the latter, were robbed in antiquity. Among the burials were signs of attempted mummification using bitumen, dressing and ornamenting the body, as well as secondary treatment of burials (Green 2006, 243-261). Burials yielded numerous artefacts pointing to wealth, social expression, and long-distance trading, such as metal scarab-rings, lotus-vessel pendants, scaraboids, electrum toggle-pins, necklaces, (ankle) bracelets, bronze weapons, bronze 'wine sets', and finger-rings (Ibid., 422-427; Tubb 1988b, 58-65). The cemetery is published extensively by Jack Green (e.g. Green 2006; Green 2007; Green 2009; Green 2010; Green 2013; Green 2014), who established that the burial record could be used to identify social changes during the end of the Late Bronze Age and Iron Age I. For example, based on a study of which individuals wore certain personal adornments, he was able to reconstruct a possible shift in kinship structure towards the Iron Age I, with a "shift to a more patriarchal society in the Early Iron Age" (Green 2007, 303-304). Other than kinship, a preference in burial goods seems to have shifted as well, where Egyptian-style beads in the Iron Age I were usually interred with children, whereas in the Late Bronze Age burials they usually accompany adults (Green 2013, 427).

Continuation of local traditions

While the abovementioned sites give evidence of hiatuses and cultural change following the Late Bronze Age, several sites show continuity of the Late Bronze Age situation.

As mentioned above, Beth-Shean shows a clear picture of such continuity. Beth Shean was a major Egyptian garrison town during the Late Bronze Age. The relevant archaeological strata from Beth Shean in the 12th century are Level VII and Level VI, the former identified as Late Bronze Age and the latter Iron Age I (see table 2). Level VII falls during the end of the Egyptian 19th Dynasty, Level VI during the 20th Dynasty, and the transition between these was an unstable period in Egypt, with internal turmoil (Mazar 2014, 15). During the Late Bronze Age Beth Shean was an Egyptian stronghold for collecting taxes in the Jordan Valley. From this phase a very substantial public building (Building NB), several structures, and a street have been excavated (Mazar 2014, 14). At the turn of the 13th to 12th century BCE, Building NB was destroyed, but only after its contents were completely removed. In its stead a new building was constructed, Building 1500, interpreted as an Egyptian 'Governor's Residence' (Ibid.). This pattern, sudden evacuation of certain buildings before their collapse, is attested at various other places at Beth Shean. It is interpreted as indicative of local abandonment and fires at the site, perhaps due to the Egyptian unrest during the end of the 19th Dynasty, but

not as proof of large-scale violent destruction. During the Iron Age I, or the 20th Dynasty, Beth Shean likely remained the Egyptian garrison town it was during the Late Bronze Age. Apart from Building 1500, a very substantial and wealthy Governor's Residence, another public building was constructed, Building 1700. This shows a continuation in the function of Beth Shean during the 12th century BCE. This continuation is also observed at the level of material culture, as attested by stable proportions of local Canaanite-type versus intrusive Egyptian pottery, which remained almost equal percentage, and shows that during both the Late Bronze Age and the Iron Age I local Canaanite inhabitants interacted with a permanent local presence of Egyptians (Panitz-Cohen 2009, 247; Martin 2009, 465). It is not until the end of the Iron Age I, in the 11th century BCE, that the Egyptian presence seems to disappear from the archaeological record at Beth Shean (Mazar 2009, 27). All of the more recent excavations at Beth Shean have been published, in final reports (Mazar 2006; Mazar and Mullins 2007; Panitz-Cohen and Mazar 2009).

The situation for Tel Rehov, located only 5 km south of Beth Shean shows a similar trend of continuation. Tel Rehov is one of the largest settlement mounds in the Southern Levant, being 10.2 hectares in size, with the upper mound 20 meters in height. Whereas Beth Shean was an Egyptian garrison town, Tel Rehov appears to have had an almost exclusively Canaanite population, as postulated from the rarity of Egyptian pottery at the site. Late Bronze Age and Iron Age I layers have so far only been excavated on the slopes of the tell, limiting their exposure (Mazar 1999, 10). However, enough significant material was recovered to reconstruct a chronological sequence for these periods. The excavated phases belonging to the 12th century are D-7, D-6, and D-5, and were only exposed on a small scale. D-7 yielded part of a large building, of which the southern and eastern walls were found. This room contained two foundation deposits, each containing two 'lamp and bowls' (Ibid., 14). These are typical for the 12th century BCE, as mentioned above. Phase D-6 and D-5 yielded little more than fragmentary remains of mudbrick walls and floor surfaces, as well as two *tabun* type ovens. The excavator states that the pottery repertoire is very similar to that of phase D-7, and should be dated to the second half of the 12th century (Ibid., 15). While limited in exposure, nothing at Tel Rehov appears to indicate destruction events or discontinuation during the 12th century BCE, which could be attributed to the nearby Egyptian garrison providing stability during this period. Tel Rehov is extensively published (e.g. Mazar 1999; Mazar *et al.* 2005; Mazar and Panitz-Cohen 2007), but awaits a final report.

Excavated Iron I sites with lack of or problematic data

While other sites in the Jordan Valley have had Iron Age I layers excavated, sometimes their publications raise questions, or the excavations did not yield enough results to reconstruct a chronology at a site.

One example of insufficient data regards Tell al-Mazar which, as attested by surface pottery, was occupied from the Middle Bronze Age onwards to the early Hellenistic period (Yassine and Van der Steen 2012, 81). As such, this site is sure to contain evidence for the 12th century. Unfortunately, however, the earliest excavated occupation from this mound begins at the end of the 11th century, in the Iron IB period (Yassine and Van der Steen 2012, 22).

Tell al-Hammeh, located 2.5 km east of Tell Deir 'Alla at the mouth of the Zerqa Valley, was partly excavated when a bulldozer had cut a significant part of the site. To this end, several excavation trenches were set out, two of which reached 12th century material (Van der Steen 2004, 200). Consequently, only a very fragmentary segment of occupation was uncovered for the 12th century BCE, which Eveline Van der Steen attempted to reconstruct with the limited data available (Van der Steen 2004, 194-212). She noted that while the household remains were of a very modest character, the pottery vessels could be seen as luxury vessels. The associated architecture consisted mostly of pits, *"covered by surfaces where industrial or household activities had been performed"* (Ibid., 201). The succeeding layer contained somewhat more substantial architecture, as well as several cooking pots which seemed to fit the Tell Deir 'Alla assemblage from phases A-D (Ibid.), and as such would place these layers in the 12th century. Her interpretation of the excavated assemblage is that the inhabitants of Tell al-Hammeh lived a "basic life style", but were in contact with the larger centres in the region (Ibid.). While the interpretation is entirely viable given the excavated archaeological evidence, appending it to the larger goings-on in this period based on so little warrants caution.

While the lower mound of Tell es-Sa'idiyeh was already mentioned above, it seems necessary to explore the higher mound in this section. It holds several impressive archaeological features, such as a large Iron Age I reinforced stairway which led to a cistern, several substantial buildings from the Iron Age I with Egyptian-style architecture, and a sequence of well-defined Iron Age II domestic dwellings arranged along streets (Tubb 1988; Tubb 1990). Of particular interest to this research is the mention of these substantial Iron Age I buildings, and the reinforced stairway. Tubb postulates that one of the buildings was a 'Governor's Residence', not unlike that of Beth Shean, and the other a public building called a 'Palace',

due to the substantial size of the building. However, the publication of this phase raises questions. The publications sometimes refer to certain archaeological features not explained in previous publications, and proceed on assumptions. For example, when the 'palace' is named as such "*for the sake of argument*" (Tubb 1990, 26), the building becomes and stays a palace for all subsequent publications in both name and interpretation. Problematically, some of the published pottery Tubb puts forward as dating to the 12th century, was actually ascribed by Amihai Mazar to have close parallels in the Iron Age IIA (10th-9th century BCE), not the Iron Age I (Mazar 2006, 323). While Tell es-Sa'idiyeh was without a doubt a very significant site, as attested by the significant Iron Age I remains, and critical in our understanding of the Jordan Valley during the 12th century BCE, the unfortunate inconsistencies from the preliminary publications from the upper tell warrant caution when interpreting the Iron Age I layers. A final publication of the Tell es-Sa'idiyeh excavations with the stratigraphy sorted is highly needed, and sincerely anticipated.

3.1.3 – Conclusions

From the survey data presented above a clear picture emerges of an increase in Iron Age I settlements, compared to the situation in the Late Bronze Age. These settlements seem to prefer locations close to water sources, which is observed in numerous of the newly formed sites along the streams of wadi's. There is also continuation, however, and various sites that were occupied in the Late Bronze Age, continue to be occupied in the Iron Age I.

From data gathered from excavations this picture is not necessarily refined, largely due to the lack of exposure of Iron Age I habitation. The larger conclusions that can be drawn from the archaeological record, however, are somewhat site-specific. While Beth Shean and Tel Rehov, both located close to one another on the west bank of the Jordan River, show signs of continuation of local traditions, the situation east of the Jordan River appears more complex. Destruction events, abandonment, resettlement, or change in site complexity are all observed throughout the area east of the Jordan River during the 12th century.

What exactly caused these changes is not yet well understood, and needs further research. There are still numerous Iron Age I sites that have not been excavated, and furthermore various Iron Age I excavations which have not been fully published. This will continue to limit the scholarly discourse on the exact details regarding the transformations which took place during the 12th century, and what it was that caused them. This makes it all the more relevant

that excavated Iron Age I layers are fully published, and more research is done on this tumultuous, critical, and formative period in the Jordan Valley.

3.2 – Debates regarding the Jordan Valley in the Iron Age I

Especially in the earlier days of the discipline, for example the end of the 19th century and most of the first half of the 20th century, archaeology was rarely allowed to tell its own story. Archaeology was often seen as an activity on the side, used to corroborate what historical records such as the Iliad or the Bible already described. Archaeology has been used to superimpose certain theories and narratives, prove theories, as well as tell its own story. However, even which archaeological data is collected and how is often very much influenced by historical narratives.

The archaeology of the Jordan Valley, as well as its surrounding regions, has played a significant role in several important debates surrounding history, archaeology, and religion. These include, for example, the exact regional boundaries of biblical tribes (in the case of the Jordan Valley Gilead) and their associated material culture, metalworking in the Jordan Valley, and evidence for the presence of Philistines and Egyptians. In the following chapter these debates will be discussed and evaluated. In the first half of this chapter an outline has been sketched of what the archaeological record from the 12th century Jordan Valley shows, and this half of the chapter will explore what theories have been formed based on, or projecting upon, this archaeological record. These debates affect the interpretation of archaeological data in this region, and bring together several wider strands of research. As such, an exploration is paramount to create an understanding of how the evidence at Tell Deir 'Alla has been interpreted, both in a local and wider context, both back in the 1960s and in modern archaeological frameworks.

The first debate that will be discussed is that of itinerant metalworkers in the Jordan Valley. This debate stands at the core of the interpretations surrounding the Tell Deir 'Alla installations in the Iron Age I. A connection of the Jordan Valley and metalworking can be traced back to several passages from the Bible, and the biblical narrative has had a lot of influence on this debate. Furthermore, another essential part of this debate is the 'itinerant' aspect of these metalworkers. As these metalworkers were postulated to have been seminomadic, only living at Tell Deir 'Alla for the winter months, an exploration of how this pertains to the archaeology is paramount.

The second debate concerns the Egyptian presence in the Jordan Valley. As demonstrated above, the 12th century archaeology of the Jordan Valley shows numerous connections to Egypt, and Beth Shean is even interpreted as an Egyptian garrison town. What this means for

the rest of the Jordan Valley, and how these Egyptian influences are interpreted, will be explored in this section.

The third, and final, debate regards the presence of Sea Peoples in the Jordan Valley during the 12th century. This debate has roots in both of the preceding two, and leans heavily on the acceptance of historical records as accurate and factual. The presence of certain seemingly intrusive aspects of material culture, combined with the biblical and archaeological links to metalworking in the Jordan Valley, caused certain scholars to postulate the presence of so-called 'Sea Peoples', a collective name for groups of people displaced by the turmoil during the Late Bronze Age collapse. This debate, which discusses the ethnicity of the inhabitants of the Jordan Valley during the 12th century BCE, will be discussed in detail below.

3.2.1 – Itinerant metalworkers in the Jordan Valley

The Jordan Valley has often been associated with metalworking, from its mention in the Bible onward. It has been postulated that metalworking was a major economic aspect for this region, and Tell Deir 'Alla played an important role in this narrative. As touched upon in the previous chapters, Franken suggested the phases A to D to be related to semi-nomadic metalworkers. This emphasis on both metalworking and mobility is part of larger debates that have greatly influenced scholarly thinking on the nature of habitation in the 12th century BCE.

The role of biblical narratives

For the debates regarding both the presence of metalworking and mobile groups in the Jordan valley, the basis goes back to the biblical narrative. For many of the early explorers of the Southern Levant, one of the main goals was to identify places from the Bible and connect them to a physical place in the landscape. These could be geological features, as well as archaeological sites. Due to the popularity of this practice much of the earlier research on the archaeology of the Southern Levant, particularly the Late Bronze and Iron Ages, is deeply rooted in the biblical narratives. These roots have influenced subsequent scholarly research on the Late Bronze and Iron Ages, and are visible to this day. It is therefore paramount to establish the role the Jordan Valley played in the biblical narrative and explore which elements of current day research have been influenced by this background, before proceeding to go over the various theories surrounding mobility and metalworking in the Jordan Valley.

As it stands, one biblical text regarding the Jordan Valley refers to metalworking as an important trait of the area. It comes from the book of Kings, and refers to the Phoenician Hiram of Tyre, who was charged with casting the bronze works for King Solomon's temple.

"He was the son of a widow of the tribe of Naphtali and his father had been a Tyrian, a coppersmith. He was endowed with skill, ability, and talent for executing all work in bronze. . . now the pails, the scrapers, and the sprinkling bowls, all those vessels in the House of the Lord that Hiram made for King Solomon were of burnished bronze. The king had them cast in earthen moulds, in the plain of the Jordan between Succoth and Zarethan" (I Kgs. 7:14, 45-46).

The plain of the Jordan between Succoth and Zarethan, as discussed in chapter 2, is traditionally interpreted as the Central Jordan Valley, the area of Tell Deir 'Alla.

The theory of semi-nomadism during the Iron Age I can also be traced back to the biblical narrative, albeit in a different fashion. One of the main questions for the onset of archaeological research in the Jordan Valley, was to document whether or not the crossing of the biblical Israelites into Canaan could be traced archaeologically (e.g Albright 1935, 10; Glueck 1945-1949; Franken 1969, 2). The biblical narrative is that, after dwelling the desert for 40 years, the then nomadic Israelites crossed over the Jordan River into Canaan and began their conquest of the region from different Canaanite tribes and city-states, before eventually settling down.

This moment in biblical history was postulated to have fallen somewhere in the Late Bronze Age or Iron Age I (Finkelstein 1988, 15). Major excavations of the 1920's and 1930's yielded results that, when interpreted in the context of the biblical narrative, seemed to fit with this 'conquest of Canaan'; as mentioned above, numerous archaeological sites display destruction events dating to this period. There was a pattern in the Levant, indeed the wider Eastern Mediterranean region, where numerous archaeological sites saw an episode of sudden destruction, and subsequent smaller-scale resettlement.

From the 1930's onward, three major schools of thought emerged with differing opinions of how this conquest took place (Bloch-Smith and Alpert Nakhai 1991, 66). The 'Albright school' postulated that the Israelites led a military campaign through the Southern Levant, systematically toppling the Canaanite city-states, and rebuilding on top of their ruins. The 'Alt school' saw the Israelites peacefully settling down, as a migrating nomadic tribe from the steppe. After peacefully settling in the hill country, battles ensued with the Canaanite city-states over territorial control, after which the Israelites triumphed and established a united

monarchy. The 'Mendenhall and Gottwald school' saw the observed changes as a type of Marxist revolution, in which the Canaanite city-states were toppled from within. The regimes of the time had become unjust and outdated, and were overthrown in a social clash. Biblical archaeologists became interested in the ways of subsistence associated with these early Israelites as they entered Canaan, and two of the three schools of thought agreed that this was a nomadic people in the process of settling down. Of interest here, is that one of the very few historical sources contemporaneous with the Iron Age I, also mentions nomadic peoples. This regards the Egyptian mention of the 'Shasu', a collective term for nomadic tribes from around the Southern Levant (e.g. Ward 1972; Levy *et al.* 2004).

From the 1950's onwards research on the Iron Age I period intensified, with a larger amount of excavations (e.g. Yadin *et al.* 1958; Yadin *et al.* 1961; Pritchard 1985). Furthermore, there was an increase in systematic archaeological surveys (e.g. Glueck 1951; Aharoni 1957; Mellaart 1962; de Contenson 1964; Ibrahim *et al.* 1976; Finkelstein 1989; Frankel 1994; Zertal 2004), increasing the visibility of Iron Age I remains. As a result of this, more comprehensive frameworks were developed defining the various types of settlements and ways of subsistence in the region (e.g. Sauer 1986; McGovern 1986; Finkelstein 1988).

The Jordan Valley, while by no means ignored, had been somewhat overlooked in this process. Prior to Franken's first excavations at Tell Deir 'Alla, in 1960, relatively little was known about the Iron Age I in the Jordan Valley apart from results from Glueck's survey reports (Kaptijn 2009a, 24). As one of the first to excavate Iron Age I remains in the valley, Franken was also one of the first to postulate that transhumance was still the most prevalent way of life during this period in the Jordan Valley. He interpreted the Late Bronze Age phases at Tell Deir 'Alla as a sanctuary with no regular settlement (Franken 1969, 20), perhaps functioning as a gathering place or local market for the larger region's seminomadic inhabitants (Franken 1992, 179).

Mobility in the Jordan Valley

From the 1990's onward more excavation and survey data became available for the Southern Levant. The picture that comes forward from these results indicates that unlike in the Late Bronze Age, when there was relatively little settled occupation in the Jordan Valley, the Iron Age I saw an increase in sites. This picture is witnessed all throughout Transjordan and is often seen as evidence for settling nomadic or seminomadic pastoralists (van der Steen 1996,

66). A possible reason for settling down, as attested from 19th century CE Bedouin, is population pressure.

Van der Steen expanded on this concept of nomadism, approaching it from an ethno-archaeological perspective. In her 1995 article she used studies on the 19th-20th century Bedouin of the Jordan Valley to potentially explain subsistence strategies during the Late Bronze Age and Iron Age I (van der Steen 1995). In it she illustrated the claims a (semi)nomadic tribe or 'ethnic group' can have to a territory, and links this to the itinerant metalworkers using the Tell Deir 'Alla region as pasture grounds during the winter months. Ji (1995, 134) also discusses these (semi)nomads in the Iron Age I, and postulates they could oscillate between sedentary and nomadic lifestyles. This would facilitate the adaptation of a sedentary lifestyle and vice versa. This complicates the archaeological picture of the Iron Age I, and could create an archaeological footprint of constant abandonment and resettling at sites, which is an archaeologically challenging premise of its own (e.g. Petit 2009, 17-19).

What emerges from the debate above is an archaeologically difficult to pinpoint phenomenon, nomadism, having been approached from numerous viewpoints (the Bible, archaeology, ethnography). From the archaeology of the 12th century Jordan Valley, it is clear that various new sites are inhabited, and nomadism might be more the norm than the exception. Formerly settled people might have been driven out of their home in the turmoil of the 12th century BCE, and have been forced to settle down elsewhere, or align themselves with new tribes or ethnic groups (van der Steen 1995, 180; Van der Steen 2004, 310). The fact that no fortifications have been observed at any of the Iron Age I sites in the Jordan Valley, lends some credence to this theory. However, numerous other factors could have determined the oscillations between nomadism and settled life, or combinations thereof.

The theory of mobility and flexibility in subsistence strategies has since largely been picked up by scholars studying the Jordan Valley, and is reflected in the conclusions by both Lucas Petit's study of settlement dynamics in the Iron Age II (Petit 2009, 228-229), as well as Eva Kaptijn's diachronic survey of the Jordan Valley (Kaptijn 2009b, 425-426).

[Itinerant metalworkers at Tell Deir 'Alla](#)

Franken proposed the idea that after the collapse of the Late Bronze Age sanctuary, Tell Deir 'Alla was abandoned for brief period of time. After this period, the site was reoccupied seasonally, by seminomadic metalworkers. Of importance for the theories on transhumance in the Jordan Valley here is the seasonality of habitation: he interpreted the archaeology as

indicating that these newcomers lived here only during the winter months, and that there was no permanent settlement at Tell Deir 'Alla during this period. He based this theory on four observed characteristics of the associated Iron Age I layers, phases A-D (see chapter 2; Franken 1969, 20-21). First, the pottery tradition was different from that of the Late Bronze Age, indicating a break in habitation, and an influx of newcomers to the site. Secondly, following the premise of his first point, these newcomers did not settle permanently at Tell Deir 'Alla, as no houses were encountered in these layers. He did however observe small post-holes, which he attributed to the possibility of tent pegs. His third argument is that the few walls that were encountered belonged to furnaces, used for casting bronze, rather than domestic buildings (the archaeological evidence relating to these contexts will be discussed in the following chapter). This, according to Franken, meant that the site had an industrial use, as opposed to a primarily domestic one. Finally, Franken based the seasonal habitation on finding many flint sickle-blades, indicative of crop cultivation and hunting activities, several bread ovens, and animal bones pointing to domestic livestock (Ibid.).

From the original publication of this theory, it has been widely accepted by scholars as well as expended upon. Publications discussing the Jordan Valley in the Iron Age I usually mention these itinerant metalworkers, living seasonally at Tell Deir 'Alla (e.g. Dornemann 1983, 39; Tubb 1988, 255). Finkelstein (1988, 112) for example states that: *"... it may very well be that some of the sites were occupied seasonally, as Franken proposed for Deir 'Alla. In other words, the inhabitants had not yet made the transition to permanent settlements, but spent winters in the Jordan Valley and summers in the hilly regions on either side of the valley."*

Other evidence for metallurgy in the Jordan Valley

Other than that assumed at Tell Deir 'Alla, there is little evidence for metalworking in the 12th century Jordan Valley. To date, no other Iron Age I metalworking installations were encountered. There is some evidence for metalworking practices at Beth Shean in the Late Bronze Age and the Iron Age I, such as a stone jewellery mould, and several crucibles and tuyères (Yahalom-Mack 2009, 581-582), but the stratigraphic origin of several of these objects raise questions and could fall outside of the 12th century BCE. However, there is ample evidence for the importance of bronze in Late Bronze Age and Iron Age I material culture. Both the Tell es-Sa'idiyeh cemetery and the Beth Shean cemetery contained substantial bronze burial gifts, such as Egyptian-style 'wine sets', weapons, and ornaments dating to the 12th century (James 1966, 136-137; Pritchard 1968, 103-104).

Interestingly, one of the earliest industrial-scale iron-smelting installations in the world was discovered at Tell al-Hammeh, only 2.5 km east of Tell Deir 'Alla (Veldhuijzen and Van der Steen 1999, 195). Several large furnaces were excavated at this site, indicating a large-scale iron smelting operation, which refined iron from iron rich ores. These furnaces, however, date between 800-700 BCE, placing them in the Iron Age II period. While separated by several centuries, the Tell al-Hammeh furnaces indicate that apparently this area of the Jordan Valley was favourable for metalworking practices.

As demonstrated above, apart from Franken's interpretations of Tell Deir 'Alla phases A-D, the evidence for metalworking in the Iron Age I Jordan Valley is rather meagre. It is largely based on the biblical narrative, and is only partly reflected in the archaeological record. The presence of metal in burials or at sites can hardly be seen as evidence of a thriving local economy based around metalworking, as metal objects occur in almost every site from this period in the Near East, and easily could have been imported.

The theories regarding mobility in this period, however, do appear to be reflected in the archaeological record to a larger degree. It is important to note, however, that while at Tell Deir 'Alla there may be indications of seminomadic habitation, the picture could become very different when more final reports are published from Iron Age I excavations, or more excavations are completed.

3.2.2 – Egyptian presence in the Jordan Valley at the end of the Late Bronze Age

Another important discussion relates to the Egyptian presence in the Jordan Valley at the end of the Bronze Age, and whether this presence continued into the Iron Age. Evidence found at Tell Deir 'Alla has been used in this debate, and its purported role in the metal industry has been interpreted to have played an important role in this discussion. During most of the Late Bronze Age the Southern Levant was largely under Egyptian control. The Jordan Valley was of great importance to Egypt, due to the presence of several trade routes (e.g. Van der Steen 1999, 178). It is therefore unsurprising that most of the archaeological sites in this area which were inhabited during this period show evidence of an Egyptian presence, or contact with Egypt. While the exact reach of Egyptian hegemony is a debated topic, it is clear that there were several Egyptian administrative centres throughout the Southern Levant.

Under the reign of Ramses III, in the first half of the 12th century BCE, Egypt came under a lot of social and political unrest. While attempts were made to protect the Jordan Valley trade routes during the internal turmoil of the 20th dynasty, this unrest eventually resulted in Egypt's withdrawal from the Southern Levant (Gilboa 2014, 628). Several of the last standing Egyptian administrative centres were located at Tel Sera' (Tell esh-Shari'a: Stratum IX) in the western Negev desert (Oren 1982, 166), at Lachish (Stratum VI) in the Shephelah (Ussishkin 1985, 221-222), and at Beth Shean (Stratum VI) in the Jordan Valley (Panitz-Cohen and Mazar 2009, 15-26).

The most prominent evidence for an Egyptian presence in the Jordan Valley comes from Beth Shean, Stratum VI (see figure 14). Stratum VI is dated precisely to Egypt's 20th dynasty, in the 12th century BCE (Panitz-Cohen and Mazar 2009, 25). Beth Shean was an Egyptian garrison town during that time, housing soldiers and Egyptian officials, and probably collecting taxes. The site contained a large governor's residence, Building 1500, which could be described as a small palace (Ibid., 15). This building was built to show Egyptian rule and power, perhaps to keep the rumours of a weakening Egypt at bay. Another large residence was excavated just east of the governor's residence, Building 1700, which has been interpreted as a major Egyptian public building. Furthermore, the excavations Beth Shean yielded a wealth of either Egyptian, or Egyptian inspired finds. This creates the picture of a thriving Egyptian outpost in the Jordan Valley, at a strategic location of the intersection of the Jezreel and Jordan Valleys. The pottery assemblage from this stratum was estimated around 50% Canaanite, and 50% Egyptian, with most of the Egyptian pottery produced locally, indicative of the presence of Egyptian potters at the site. While the site has been interpreted in the past as majority Canaanite living under Egyptian rule (James and McGovern 1993, 238; Higginbotham 2000, 130), this is challenged by the later excavators, who tend towards Beth Shean being a predominantly Egyptian town with a local Canaanite presence (Panitz-Cohen and Mazar 2006, 18).

Not only at Beth Shean is an Egyptian presence in the Jordan Valley well attested, although the exact nature of the other examples is less well-defined. While Beth Shean yielded a hieroglyphic inscription stating it was the seat of an Egyptian governor (Gilboa 2014, 628), other excavations in the Jordan Valley have yielded different signals indicative of Egypt's sphere of influence. These can be found in numerous other aspects at Tell es-Sa'idiyeh and Tell Deir 'Alla, which will be discussed below, indicating Egypt was influential on both sides of the Jordan Valley.

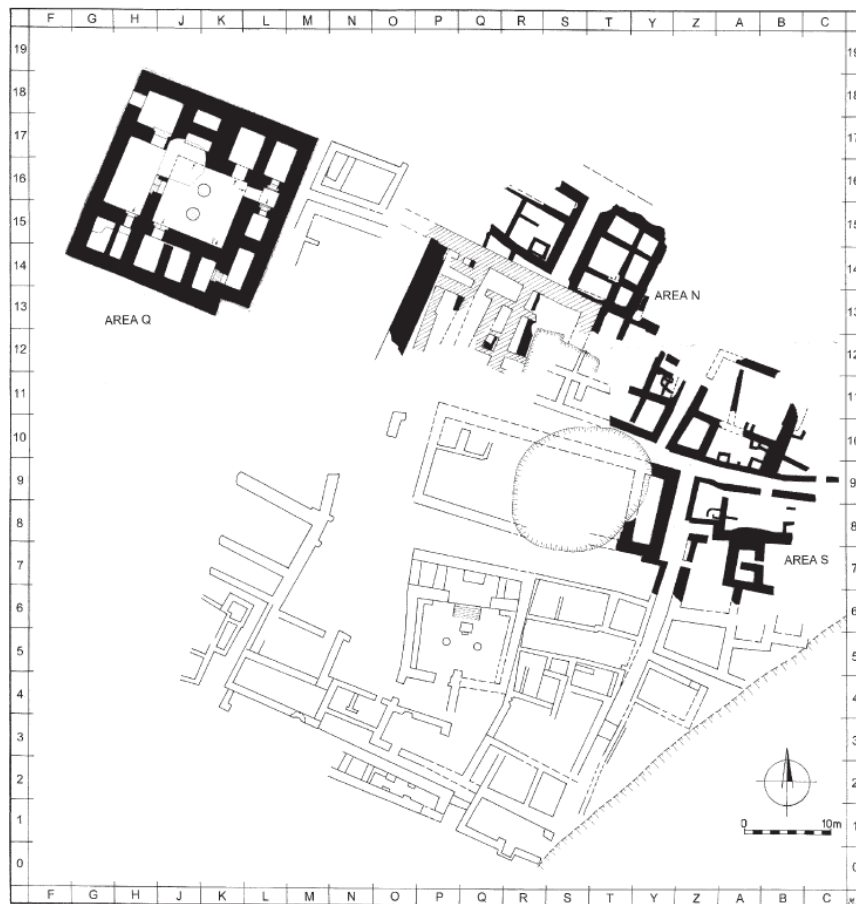


Figure 14: Beth Shean stratum VI, with building 1500 to the east, and building 1700 centrally located (Mazar 2009, 16).

Egyptian influences at Tell es-Sa'idiyeh

Excavations at Tell es-Sa'idiyeh have established a clear link with the Egyptian sphere of influence, and perhaps even direct control over the site in the 12th century BCE. Much of this evidence comes from Stratum XII, dated to the 12th century BCE. According to the excavators the site was an Egyptian stronghold which contained a large city wall, a 'Residency' building, and a 'Palace' building during the 12th century BCE (Tubb and Dorrell 1993, 58). In particular the 'Palace' building from Stratum XII was attributed to an Egyptian presence at Tell es-Sa'idiyeh (Tubb 1990, 26).

According to Tubb this building was constructed of mudbricks confirming "*almost perfectly to New Kingdom Egyptian sized bricks*" (Ibid.), might have had vaulted roofs, and was heavily plastered. Among its finds were a clay papyrus-roll sealing bearing two identical stamp seal impressions, and Egyptian-style storage jars (Ibid., 27-29). Tubb postulates that this building might have had a water cooling reservoir for wine storage (Tubb 1990, 29; 1995, 140). Tell

es-Sa'idiyeh's cemetery provided plentiful evidence for Egyptian-style objects, such as personal ornaments, ceramic bowls and handleless jars (Green 2010, 767), indicating that its inhabitants were aware of and interacting with Egyptian culture. Interestingly, Green established that graves with Egyptian-style objects are associated with expressions of higher social status and female gendered identity (Green 2013, 422), providing a glimpse into the value the inhabitants ascribed to emulating Egyptian culture.

As mentioned in the first half of this chapter, the publications of Tell es-Sa'idiyeh should be approached with caution. The excavator's interpretation of phase XII being an Egyptian stronghold also raises questions. Regarding the 'Palace' building, stylistic comparisons are not investigated, leaving the main argument for the interpretation of an Egyptian building being the size of the mudbricks used, and the fact that Egyptian-style pottery was encountered. In the publications the descriptions of the 'Residency' and the 'Palace' buildings are meagre, making it difficult for the reader to form an opinion on the matter. A final publication has yet to substantiate the excavators' hypotheses. While Tell es-Sa'idiyeh was definitely in Egypt's sphere of influence, one should be cautious interpreting the site as an Egyptian stronghold with a 'Governor's Residence'. The current evidence it seems, would also support an interpretation of the site as having a local population which made reference to Egyptian culture in their material repertoire.

Egyptian influences at Tell Deir 'Alla

As mentioned above, Tell Deir 'Alla housed a substantial sanctuary during the Late Bronze Age, which was destroyed early in the 12th century BCE. This sanctuary mystified the excavator when encountered, and raised the question of what such a sizeable building's function was in this part of the Jordan Valley. Research on its background, layout, and its inventory revealed strong evidence for connections to Egypt.

The layout of the temple has been likened to that of the Fosse temple at Lachish, and the Stratum VII-VI temple from Beth Shean (e.g. Negbi 1991, 212-214), which both were constructed with Egyptian-style architectural features. Furthermore the excavator postulates that the sanctuary was most likely built by or with the help of Egypt, already the Middle Bronze Age (Franken 1992, 178). While in the 12th century BCE Egypt's role in the daily functioning of the temple is likely not dominant, the fact a faience vase bearing the cartouche of Queen Taousert (see figure 15) was encountered in the last use-phase of the temple's cella indicates its influence was still present. The Tell Deir 'Alla Late Bronze Age temple, when

destroyed in the 12th century BCE, contained objects not only from Egypt, but also Syria, Phoenicia, and locally made objects. This in combination with its solitary position in both the political and physical landscape, led Franken to believe that the Tell Deir 'Alla temple most likely functioned as a marketplace, where local traders from Gilead would exchange with traders from Egypt (Ibid.). This theory is maintained and expanded upon by Van der Steen (2008, 20), who states that Egypt was actively maintaining the trade route up the Jordan Valley due to the threat of Pella's attacks.

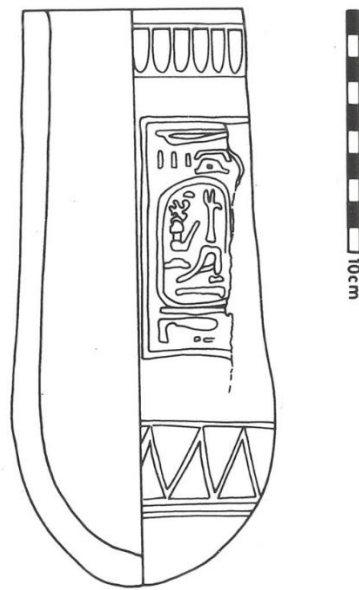


Figure 15: Faience vase with the cartouche of Queen Taousert, from Tell Deir 'Alla (after Franken 1992, 31).

Egyptianizing behaviour in the Jordan Valley

The evidence from the eastern side of the Jordan Valley hardly points toward Egyptian hegemony of this area, but does show a profound Egyptian interest, as well as perhaps investment. Furthermore, it shows local interactions with the Egyptian cultural and religious spheres, and perhaps even local interpretations of said spheres.

A theory that might explain this occurrence is Higginbotham's 'elite emulation' theory for Ramesside (19th to 20th Dynasty or 1292-1069 BCE) Palestine (Higginbotham 1996; Higginbotham 2000). The 'elite emulation' model comes from the study of core-periphery interaction, and holds that the *"peripheries of prestigious cultures sometimes derive a legitimating function from the core cultures. Features of the "great civilization" are adopted and adapted by local elites and their communities to provide an iconography of power which transfers some of the prestige of the distant center to the rulers"* (Higginbotham 2000, 6).

While Egypt had several strongholds throughout the Southern Levant during the Ramesside period, Palestine was for the most part governed by local governors on Egypt's behalf. As time passed, this caused the local elites and their communities to "*emulate Egyptian culture, which would presumably have enhanced their status in the eyes of both their own population and the pharaonic bureaucracy*" (Ibid., 138). What is observed in the central Jordan Valley might very well be a form of the 'elite emulation' model proposed by Higginbotham.

3.2.3 – 'Sea Peoples' in the Jordan Valley

The most significant debate on the matter of ethnicity in the Jordan Valley at the turn of the Late Bronze Age to the Iron Age I, relates to the presence of the so-called 'Sea Peoples' in the Jordan Valley, their origins and political positioning, and their role in the local economy. The Sea Peoples phenomenon is part of a widely-known and explored archaeological debate, encompassing various aspects of the goings-on during the Late Bronze Age collapse. The collapse of the Hittite and Mycenaean empires is often said to have brought about a wave of mass migrations to the Levantine coasts, and Cyprus (Oren 2000, xvii). The migrating peoples commonly referred to as the 'Sea Peoples' are textually only known from Egyptian inscriptions (e.g. Adams and Cohen 2013), and are archaeologically difficult to detect (Cline 2014, 3).

As this discussion has had profound impact on the understanding of the Late Bronze Age collapse and following Iron Age I period, the main evidence and lines of reasoning will therefore be explored in greater detail. Archaeological finds and contexts from Tell Deir 'Alla have played an important part in this debate, and its aforementioned purported role in the metal industry has important implications for this discussion. Before moving on to the debate regarding their presence in the Jordan Valley, a brief outline will be given of the theoretical background regarding the wider Sea Peoples debate. While an exploration of all the fundamentals and intricacies of the Sea Peoples is beyond the scope of this thesis, a brief overview will be given of the pillars of the Sea Peoples debate, as they are relevant for the debate explored below.

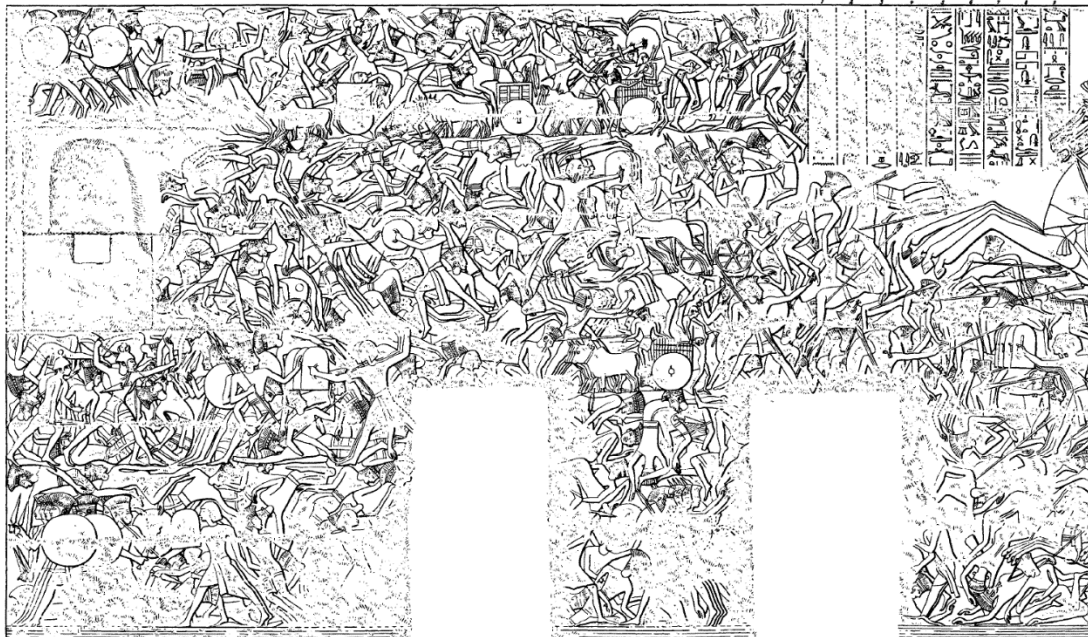


Figure 16: Land battle with the 'Sea Peoples' (Nelson et al. 1930, pl. 32).

Who are the Sea Peoples?

The Sea Peoples are traditionally often associated with the various destruction events at the end of the Late Bronze Age throughout the eastern Mediterranean, or seen as the cause. The term 'Sea-Peoples' usually refers to a group of different peoples in transition towards the end of the Late Bronze Age. These Sea Peoples are identified with the names Peleset, Tjekker, Denyen, Teresh, Luka, Weshesh, and Shekelesh. They supposedly attacked pharaoh Merneptah in his fifth year of reign, 1219 BCE, and pharaoh Ramses III in his eighth year, 1162 BCE (Wainwright 1961, 71). Traditionally three pillars hold the foundation of the Sea Peoples' paradigm: the Papyrus Harris I, the reliefs and inscriptions at the mortuary temple for Ramses III in Medinet Habu, and seemingly intrusive archaeological assemblages (Ben-Dor Evian 2017, 267).

1. The mortuary temple for Ramses III at Medinet Habu contains a series of inscriptions and reliefs related to the Sea Peoples (see figure 16). These are among reliefs recalling military raids in Nubia and Libya, a campaign into Syria, a second Libyan war, and a war with "peoples from the north" (Nelson et al. 1930, 4), the latter of which is commonly designated as the 'Sea Peoples'. In the reliefs one can observe Egyptian forces fighting against armed forces, in differing headdress from the Egyptians. In the first relief, called 'Ramses III in battle with the land forces of the Sea Peoples' (Nelson et al., pl. 32), a contingency of the Sea Peoples are engaged in a land battle with the

Egyptians. Depicted among the fighting soldiers and chariots are families travelling with ox carts. In the second relief (Nelson *et al.*, pl. 37) they are engaged in a naval battle. The weaponry of the Sea Peoples has been said to contain elements of Anatolian and Aegean origin (e.g. Yasur-Landau 2010, 566). The reliefs are accompanied by an inscription, which details how foreign countries conspired in their islands and gathered to attack Egypt in a confederation (Wilson 1969, 262-263), but nothing is mentioned about the fact that this confederation is apparently travelling with their families, animals and carts of supplies. These elements are striking, as they give more the impression of a group of displaced people, rather than vicious marauding pirates.

2. In the Papyrus Harris I, Ramses III describes how captured 'Sea Peoples' were resettled in Egyptian strongholds, either in southern Canaan or in Egypt itself. The papyrus reads: *"I extended all the boundaries of Egypt; I overthrew those who invaded them from their lands. I slew the Denyen in their isles, the Tjekker and the Peleset were made ashes. The Sherden and the Weshesh of the sea, they were made as those that exist not, taken captive at one time, brought as captives to Egypt, like the sand of the shore. I settled them in strongholds, bound in my name. Numerous were their classes like hundred-thousands. I taxed them all, in clothing and grain from the storehouses and granaries each year"* (after Breasted 1906, 201).
3. The third pillar, seemingly intrusive archaeological assemblages, is slightly more problematic than the previous two. Mentioned above is that the Sea Peoples are difficult to pinpoint archaeologically: it can be difficult to ascertain whether a hypothetical Aegean style dagger in a burial in the Jordan Valley is indicative of an Aegean warrior-burial, a treasured trophy, or an exotic item obtained through trade and given to a deceased Canaanite. Nonetheless, this pillar saw fruition almost exclusively through the archaeology of the Peleset. Of all the Sea Peoples by far the most scholarly attention has been given to the Peleset, who have traditionally been identified as the biblical Philistines.

The archaeology of the Philistines has a long history of research, and is traditionally seen as one of the most clear-cut cases for ascribing an ethnicity to an archaeological assemblage. In her comprehensive work on the archaeology of the Philistines, Dothan (1982, 25) states that Philistine culture *"designates the homogeneous*

assemblage of the material culture found primarily in the territory and within the sphere of influence of the Philistines, and which fits into the stratigraphical and chronological framework of Philistine history in Palestine during the Iron Age I, from the twelfth and eleventh centuries B.C.E. to the conquest of David".

This homogenous assemblage consists several aspects. One such aspect is specific types of pottery, for example Mycenaean IIC:1b or locally produced Philistine Monochrome pottery, usually in closed forms such as stirrup jars (Killebrew 2000, 233). The appearance of such pottery in sites which previously only yielded a heterogeneous assemblage of Canaanite pottery, was traditionally seen as the arrival of Philistines. This was first encountered during excavations at Ashdod, where the Late Bronze Age Canaanite culture was interpreted as having been succeeded in its entirety by a different culture, recognisable by the appearance of Mycenaean IIC pottery (Dothan 1989, 1).

Another such aspect are the 'grotesque' style anthropoid coffin burials. This burial practice of using clay 'sarcophagi' was already well-established earlier in Late Bronze Age Canaan. However, the 'grotesque' style was newly introduced to the Southern Levant, around the time the Philistines were supposed to have arrived. Dothan (1982, 268-275) noticed that the depictions on certain of these anthropoid coffins coincided with certain groups on the Medinet Habu reliefs, providing a link between this burial custom and the Sea Peoples. While this theory is not entirely unchallenged, these coffins are often interpreted as depicting a form of self-expression by Sea Peoples (e.g. Yasur-Landau 2012, 38).

These pillars together resulted in the formation of the archaeological phenomenon of the Sea Peoples, and scholars have searched for exact origins, archaeological assemblages, as well as the exact reach their migrations had ever since. Importantly, however, from the onset of the Sea Peoples debate there has been resistance to inherently ascribing an ethnicity to an archaeological assemblage. Bunimowitz (1990, 210-211) states, for example, that *"the Philistine material culture" – a construct of modern research, is actually a mixture of cultural assemblages that coexisted in Philistia during the 12th-11th centuries B.C.E. Therefore, the "Philistine material culture" cannot be representative of any actual "ethnic" group that lived in the area during this period, nor can it be regarded as eclectic".*

Metalworking 'Sea Peoples' and the Jordan Valley

The Sea Peoples in the Jordan Valley debate can largely be seen as having originated in order to explain and/or explore two phenomena. The first is the presence of a striking amount of Philistine, or non-Canaanite, material culture at most of the Late Bronze Age or Iron Age I sites in the Jordan Valley. The second, evidence of metalworking in the Jordan Valley, builds on the first, but originates from the biblical narrative. In the biblical narrative, metalworking was something that was foreign to the Israelites. This is expressed in the book of Samuel, for example, in which it is mentioned that the Israelites would go to the Philistines for their metalworking:

"No smith was to be found in all the land of Israel, for the Philistines were afraid that the Hebrews would make swords or spears. So all the Israelites had to go down to the Philistines to have their ploughshares, their mattocks, axes, and coulters sharpened. The charge for sharpening was a pim for ploughshares, mattocks, three-pronged forks and axes, and for setting the goads. Thus on the day of the battle, no sword or spear was to be found in the possession of any of the troops with Saul and Jonathan; only Saul and Jonathan had them" (1 Sam. 13:19-22).

Both the passage from 1 Sam. 13 and 1 Kgs. 7, mentioned in chapter 3.3.1, make note of the skill of metallurgy being foreign to the Israelites. Biblical scholarship is still unclear whether this meant that the skill itself was unknown to the Israelites, or if the Philistines prohibited its use (Meschel 2014, 264). The passage from 1 Kings 7:46 traces the practice of metalworking to a specific location, being the plains between 'Succoth' and 'Zarethan', both traditionally located in the Jordan Valley. This location puzzled biblical scholars, as the Jordan Valley did not seem to have any particular advantages for bronze production over any other nearby region. Why did the Bible explicitly name the plains between Succoth and Zarethan as the location where Solomon had the bronze works for his temple cast?

When in the early 1960s excavations at Tell Deir 'Alla yielded its sizeable Iron Age I bronze casting furnace (Franken 1969, 36), an interpretation which will receive further scrutiny in this thesis, and Tell es-Sa'idiyeh and Beth Shean yielded Iron Age I tombs containing bronze inventories (James 1966, 136-137; Pritchard 1980, 28-34), a seemingly clear archaeological link appeared between the Jordan Valley and metallurgical practices. The fact that Tell Deir 'Alla was traditionally identified with Succoth, gave the biblical narrative more appeal. The metallurgical practices were quickly linked to the 'foreign' elements mentioned in the Bible,

and the concept of a presence of Sea Peoples in the Jordan Valley (e.g. in the form of Philistines) entered the archaeological debate.

The first scholar to propose that the Sea Peoples settled in the Jordan Valley at the end of the Late Bronze Age was Pritchard (1968, 108-109). He observed similarities between the bronze repertoires from excavated tombs in Beth Shean (tomb 90, cf. James 1966, 136-137) and the Tell es-Sa'idiyeh cemetery. Since these bronzes were linked to 'Philistine' pottery types, namely specific Aegean stirrup jars, and 'grotesque' style anthropoid coffin burials, he believed that there had been an influx of newcomers to the Central Jordan Valley in the Late Bronze Age, whom he labelled as "metalworking Sea Peoples".

While this theory did not attract a lot of support at the time, Tubb expanded on it after renewing the excavations at Tell es-Sa'idiyeh (Tubb 1988a). He nuanced some of the theories put forward by Pritchard, acknowledging that Philistine type pottery already existed in Palestine well before the arrival of the Philistines, and as such couldn't be used as an indicator of foreign elements. The anthropoid coffins, however, were only found in the Southern Levant at sites which contained Egyptian garrisons at the time, where Sea Peoples were known to have been hired as mercenaries. Egyptian garrisons were well attested throughout the Southern Levant, also in the Jordan Valley at Beth Shean. Four such anthropoid coffins had been found at Beth Shean, placing a small group of Sea Peoples in the Jordan Valley during the Iron Age I period. Of these anthropoid coffins, Tubb claims that the ones that were made in the 'grotesque style' were used by Sea Peoples mercenaries (Ibid., 257). While no such coffins were found during Tubb's excavations at Tell es-Sa'idiyeh, conceptually related 'double-pithos' burials were encountered. He attributes these burials to the Sea Peoples, likely originating in Anatolia (Ibid.). He also postulated that the Tell Deir 'Alla Iron Age I itinerant metalworkers were of an Aegean origin, due to the undeciphered Late Bronze Age tablets containing "*some form of Aegean script*" (Ibid., and see figure 17). Based on the archaeological evidence mentioned above, he proposes the following model for bronze production in the Southern Levant (Ibid., 259-260):

1. All sites where evidence for bronze production in the Late Bronze and early Iron I periods were controlled, or at least dominated, either by the Egyptians or Philistines.
2. These bronze production sites were established by the Egyptians, but the metalworkers consisted of groups of Sea Peoples, perhaps employed in garrisons by the Egyptians.

3. After the land and sea battles with the Sea Peoples in the 8th year of Ramses III's reign, metalworking conducted by Sea Peoples within the Egyptian garrisons continued uninterrupted in sites still under Egyptian control.
4. After most of the Sea Peoples settled, by the 12th century BCE, the Philistines became the dominant group in Palestine/Transjordan. They not only continued bronze production at established centres, but greatly expanded the industry by developing new centres at sites they founded or took over.



Figure 17: One of the inscribed clay tablets from the Late Bronze Age sanctuary at Tell Deir 'Alla (from the Tell Deir 'Alla archive).

He states that this model fits well with the picture from the biblical narrative, and especially well with the passage from I Kings 7:46, given the amount of evidence for bronze production in the Jordan Valley (ibid, 260).

Tubb's 1988 paper ignited a strong debate on the presence of Sea Peoples in the Central Jordan Valley. Negbi (1991) responded to Tubb's theories, and largely aimed to nuance and disprove them. While she agreed that an increasing amount of evidence had emerged for Egyptian influences in the Jordan Valley (e.g. Tubb 1988b, 44-46; Singer 1990, 374-377), evidence for Aegean elements in the region was less convincing (Negbi 1991, 207). To reinforce this view, she explored step-by-step the arguments Tubb gave for a presence of Sea Peoples in the Jordan Valley, being the funerary data, data from sacred and secular contexts, and the metallurgical data.

1. The funerary data Tubb used to identify both Beth Shean and Tell es-Sa'idiyeh to a Sea Peoples presence, were both faulty. For the case of Beth Shean, a study by Oren (1973, 101-129) revealed an additional 41 anthropoid coffin burials. Of these coffin burials, the small number both Pritchard and Tubb referred to had not been found *in situ*, raising serious chronological problems. Furthermore, it proved impossible to connect the coffins to the deposit of bronze objects from tomb 90, negating their connection to the possibly foreign bronzes.
2. Regarding the Tell es-Sa'idiyeh cemetery, Negbi notes that while the 'double-pithos' burials could very well be of "*an alien group within the population*" (cf. Tubb 1990, 33), attributing them to Sea Peoples does not hold. While an Anatolian origin of this practice can't be excluded, it is Negbi's opinion that immigrants of an Aegean origin would have preferred Aegean burial practices rather than a Hittite one (Negbi 1991, 212).
3. Data from sacred and secular contexts in Negbi's evaluation of Tubb's model, retains to Tubb's proposed Aegean origin of the Tell Deir 'Alla tablets, as well as the rare specimens of Aegean stirrup jars from Beth Shean. Negbi makes the argument that the Tell Deir 'Alla tablets are of a religious nature. This, in her opinion, necessitates looking at the layout of the temple they were found in, to establish whether or not any there are any foreign elements in its layout. According to Negbi the Tell Deir 'Alla temple compares best to the Canaanite Fosse Temple at Lachish, and the Levels VII-VI temples at Beth Shean. These temples have strong Egyptian architectural affinities. The royal cartouche of Queen Taousert from Tell Deir 'Alla lends credence to strong Egyptian influences at the site in the Late Bronze Age. This combined with an absence of Aegean cultic objects from the Tell Deir 'Alla temple speaks against a presence of Sea Peoples (Negbi 1991, 212-214).

It is hard to determine the origin of the Aegean stirrup jars mentioned above, according to Negbi. She deems it unlikely that they were made in Philistia, instead postulating that they were imported from the Aegean. This would nullify claims that Aegean potters were making these pots at Beth Shean for example (Ibid., 214-215).

4. Negbi proceeds with treating the metallurgical evidence. As a starting point she chooses metallurgical installations. The first point of Tubb's model assumes there was a bronze production centre at Beth Shean, a claim which Negbi traced to the publication of a single crucible from this site. The stratigraphy of the locus from which this crucible originates was, however, inconclusive (James 1966, 26). This meant the

crucible could be from a period after the Egyptian withdrawal from the site (Negbi 1991, 217) Furthermore, the crucible was *“the only piece published from the major Egyptian stronghold of Beth-Shean”* (Bienkowski 1989, 60), hardly lending credence to the presence of a major bronze production centre at the site, nor the Egyptians hiring mercenaries as metalworkers (Negbi 1991, 217).

Moreover, Negbi shows that metallurgical installations have not only been found at Philistine or Canaanite sites, but all throughout the Southern Levant. While in the chaotic period that was the Late Bronze Age it seems entirely possible that some metalworkers found their way to the Levantine coast, that *“by no means implies that at the beginning of the Iron Age bronze production in Israel and Transjordan depended on new immigrants from the Aegean Islands”* (Negbi 1991, 218-219).

Negbi's conclusions from her article are firstly that there was undoubtedly an Egyptian control over the 12th century BCE Central Jordan Valley, as attested by governor's residences at both Beth Shean and Tell es-Sa'idiyeh, the Egyptian affinities in architecture from both Beth Shean and Tell Deir 'Alla, burial practices, and the numerous Egyptian small finds from these sites. Secondly, she states that this part of the valley can safely be regarded as predominantly Canaanite in the 12th century, with several notable outliers (cf. the 'pithos-burials'), which might be attributed to 'Land Peoples' from Anatolia rather than the Sea Peoples. Lastly, after Egyptian influence disappeared from the valley in the mid-12th century BCE, it is not given that new ethnic elements made their way into the valley. She deems it more likely that the metalworkers at Tell Deir 'Alla were direct successors of local metalworking experts, who perhaps took their experience from working for the Egyptians in the Arabah Valley (Negbi 1991, 227-228).

It is necessary to mention here that Negbi's criticism was not immediately and universally accepted. McGovern for example holds the opinion that Sea Peoples were the most likely to have been buried in the anthropoid coffins encountered in Beth Shean, as Egyptians would not want to be buried in the Southern Levant, and local inhabitants never showed any inclinations in adopting Egyptian burial customs (McGovern 1994, 150).

Tubb replied directly to Negbi's article in his 1995 publication *“An Aegean Presence in Egypto-Canaan”* (Tubb 1995). For most of this article he reinforces the case for an Egyptian presence at Tell es-Sa'idiyeh, discussing recent archaeological discoveries from his excavations at the site such as what he puts forward is an Egyptian governor's residency (Ibid., 140). He then proceeds to link this to the presence of Sea Peoples at Tell es-Sa'idiyeh, stating that based on

the clear Egyptian presence at the site, *“it would certainly not be out of place to suggest that a group of such people might have been present within the population, serving the Egyptians in some capacity”* (Ibid., 142). He yields his former argument regarding the use of the ceramic corpus in identifying Sea Peoples in the Jordan Valley, but doubles down on the burial record. He states that the evidence for the presence of Sea Peoples at Tell es-Sa’idiyeh comes from the burial record, *“the nature of which is unambiguous, and which is traditionally so conservative that it demands recognition as an ethnic indicator”* (Ibid.). Tubb maintains that the aforementioned ‘double-pithos’ burials are a clear indicator of a foreign presence at Tell es-Sa’idiyeh, especially since they are relatively rare in the rest of the Southern Levant. During the years since his 1988 publication more such burials had been excavated, bringing the total to 27, with an additional 52 jar burials (also ‘foreign’). Some of these pithos burials contained evidence for the ritual ‘killing’ of funerary gifts, such as daggers, javelins, and arrowheads (Ibid., 141). He traced these burial customs to Hittite Anatolia, where he states it is generally accepted some of the Sea Peoples originated. It is, according to Tubb, entirely possible these people came via land rather than sea towards the fall of the Hittite empire and might be better referred to as ‘Hittite refugees’, rather than Sea Peoples. He does not think these peoples settled gradually at Tell es-Sa’idiyeh, however, but implies a much longer standing relationship between the Egyptians and the ‘aliens’ (Ibid., 143).

Negbi once again challenged the theories put forward by Tubb, in her 1998 article (Negbi 1998). After a brief exploration of the political scenario in the 13th-12th centuries, she systematically treats six aspects of material culture related to the Sea Peoples argument (including issues not addressed by Tubb in his 1995 paper), with wider implications for both sides of the Jordan river (Negbi 1998, 187-196).

1. ‘Grotesque’ style anthropoid coffins can no longer be used as indicators of Sea Peoples’ burials. Furthermore, this style of burial likely persists into the Iron Age I period, and over a wide geographical area.
2. The pithos burials from Tell es-Sa’idiyeh appear not to be as unique in the Southern Levant as previously stated, as they have been encountered in various sites on both sides of the Jordan River. The scholarly consensus is, in accordance with Tubb’s statement that this practice originated in Anatolia.
3. The stirrup jars from Tell es-Sa’idiyeh and Beth Shean became part of the ‘pots for people’ debate (cf. Bunimowitz and Yassur-Landau 1996). While provenance studies showed that several of the stirrup-jars from Tell es-Sa’idiyeh were produced locally, the question remains whether they were made by emigrated potters working in their

traditional style, or local potter imitating foreign types. The jars from Beth Shean were visually examined on style and technique, the results of which indicated they *“were likely imported from Greece or from Cyprus”* (Mazar 1997, 71). Importantly there was an absence of locally made variants of monochrome Mycenaean IIC table wares, making the presence of Aegean potters at Beth Shean highly unlikely (Negbi 1998, 193).

4. The Tell es-Sa’idiyeh and Beth Shean bronze assemblages were among the first to be compared in the Sea Peoples debate, and were seen as indicators of foreign influences in the Jordan Valley. Negbi states here, however, that the Tell es-Sa’idiyeh bronze artefacts are more likely an amalgamation of local tradition and Levanto-Cypriot workmanship, not uncommon in other sites such as Ugarit, Acco, Tel Nami, Megiddo, and Beth Shean. The only clearly foreign element from the bronze assemblage was a sword from one of the burials, which was of a diagnostic Hittite workmanship (Ibid., 194-195).
5. The ‘killed’ weapons from the Tell es-Sa’idiyeh cemetery, while having clear parallels in Protogeometric and Early Geometric Greece, also has Bronze Age forerunners in the eastern Mediterranean. The ‘killing’ of burial goods also occurs on Cyprus, at Ugarit, as well as in Anatolia (Ibid., 195-196).
6. The Tell Deir ‘Alla tablets were now more likely to contain a ‘Proto-Canaanite script’ (cf. Franken 1992, 176), lending more credibility to Negbi’s aforementioned observations of the Tell Deir ‘Alla temple being a Canaanite temple.

Negbi’s conclusion is that there is no reason to assume that the indigenous metalworking traditions of the 14th-13th BCE centuries disappeared during the 12th century, but instead persevered well into the 11th century BCE. The main argument Tubb gives for the presence of Sea Peoples in the Jordan Valley, the double pithos burials, were in fact most likely Hittite refugees, and not *“ambiguous groups of northern ‘Sea Peoples’ who were already occupying the lowlands of western Anatolia prior to that date”* (Negbi 1998, 198). She finishes her argument: *“Reassessment of several aspects of material culture (burial practices, pottery vessels, metal artefacts and inscribed tablets) from sites such as Beth Shean, Tell es-Sa’idiyeh and Tell Deir ‘Alla seems to indicate that the population of the central Jordan Valley at that date was overwhelmingly Canaanite”*. The picture that emerges from re-evaluation of the archaeological data at these sites fits well into the model recently suggested by Higginbotham (1996:154) who demonstrates *“that the Egyptianization of Ramesside Canaan*

represents emulation of Egyptian culture by the local elite rather than a massive influx of Egyptian soldiers and administrators."

Tubb entered the debate once more in an article in a book on the Sea Peoples (Tubb 2000), in which he interestingly does not reply to Negbi's 1998 paper. Much of the article is copied and pasted from his 1995 article, with more added bibliographical references to lend more credence to his theory that the double-pithos burials indicate *"a sizable alien element within the population"* (Tubb 2000, 186). He explores several other sites in the Jordan Valley, being Tell Mazar and Tell Deir 'Alla. The Late Bronze Age at Tell Mazar was still unpublished, and the Late Bronze Age at Tell Deir 'Alla only recently (Franken 1992). Franken postulated that Tell Deir 'Alla functioned as a religious centre under Egyptian sovereignty (Franken 1992, 166), but Tubb states that Egyptian influences at the site suggest little more than the result of trade contact. He does touch upon the Tell Deir 'Alla tablets, which Franken (1992, 176) now believed held a form of Proto-Canaanite script. Tubb states only slender evidence was provided, given that they are still undeciphered (Tubb 2000, 191). Importantly, he admits that *"Sea Peoples might well have been present elsewhere in the Jordan Valley, but we are not yet in a position to demonstrate it at any site other than Sa'idiyeh"* (Ibid.). After reviewing known bronze production sites from the surrounding area, he states, altering his 1988 model slightly, *"that the sites producing evidence for bronze production in the final Late Bronze and Early Iron I periods were, to a certain extent, controlled either by the Egyptians or by the Philistines"* (Ibid., 192). Concluding, he makes a significant statement regarding the ambiguity of the evidence he presented. *"Altogether, therefore, it seems not an unreasonable suggestion that if Sea Peoples were present in the central Jordan Valley in the 12th century B.C.E., one of their functions might have been as metalworkers"* (Ibid., 193). This sentence is significantly more equivocal than his original model.

After this reply the Sea Peoples debate is largely laid to rest, and not picked up again. It appears that Negbi's arguments against a fixed Sea Peoples presence in the Jordan Valley were dominant, and are taken up in the scholarly discourse regarding the Jordan Valley. Further studies seem to corroborate her point of view. This becomes clear when the Tell es-Sa'idiyeh cemetery is researched in detail by Green for his 2006 PhD dissertation, in which he meticulously investigates all the occurrences in the burial assemblage. Among these are the double-pithos burials, used by Tubb to argue for a Sea Peoples presence in the Jordan Valley. However, Green states that *"there is no clear link between Sea Peoples and DPB's [double pithos burials], or evidence for specifically Aegean populations at Sa'idiyeh, partly*

corroborating Negbi's view that there is no clear evidence for Sea Peoples settlement in the Jordan Valley" (2006, 277).

Yet, several years later the debate was renewed. In a paper presenting the Iron Age I remains from Tell Abu al-Kharaz, located north of Tell es-Sa'idiyeh, Fischer and Bürge entered the debate, with the following title: *"Cultural Influences of the Sea Peoples in Transjordan. The Early Iron Age at Tell Abu Haraz"* (Fischer and Bürge 2013). While at first glance the title would indicate an argument for the presence of Sea Peoples in the Jordan Valley, the paper uses the term 'Sea Peoples' more loosely than Tubb or Negbi had done, perhaps indicative of where the general Sea Peoples debate has recently steered towards. The term Sea Peoples here refers more to the Phoenician, Philistine, and Aegean material cultures, rather than the concept of invading peoples portrayed on the Medinet Habu reliefs. Notably, they use the term 'Philistine/Aegean' as describing the same material culture (Ibid., 162). While a seemingly controversial title for a paper, its content is significantly less so. The paper mostly dealt with presenting parallels for the assemblage of material found in the Iron Age I layers of Tell Abu al-Haraz, many of which show clear links to the Levantine coastal region. Based on the archaeological assemblage from Tell Abu al-Haraz Fisher and Burge postulate that, at the turn of the Late Bronze Age to Iron Age I, the site was inhabited by three groups living together. These three groups consisted of local people, and offshoots of the Sea Peoples from the west (Philistines) and north (Phoenicians) (Ibid., 163).

It is clear the last word is not yet said on the presence of Sea Peoples in the Jordan Valley, and as more data becomes available more will be added or nuanced in this debate. While Negbi appears to have settled that the population of the Jordan Valley was predominantly Canaanite during the 12th century BCE, her conclusions are being challenged. Scholars recently started re-evaluating various arguments of this debate (e.g. Emmanuel 2017), which will surely spark a new engagement with the subject.

3.3 – Conclusions

As presented in this chapter, various developments are witnessed in the Jordan Valley at the turn of the Late Bronze Age to the Iron Age I. An increase in settlements is observed, which occur mostly near water sources, and already existing sites are sometimes destroyed, abandoned, and/or resettled. The archaeology shows both continuation of local traditions, and evidence for new influences reaching the Jordan Valley. With this archaeological evidence various theories were formed, in order to explain the observed developments.

Sometimes these theories appear superimposed on the archaeological evidence, and the search for the 'ethnic' origins of the inhabitants of the Jordan Valley, or changes therein, appear more important than exploring the archaeological evidence itself.

This is certainly the case for the Sea Peoples debate. While both Tubb and Negbi seem to sketch a picture of 'either' 'or', the archaeological situation might indicate a situation in the middle. It is attested in the archaeological record that more intrusive pottery types are observed after the Late Bronze Age collapse, indicative of population movement. The fact that groups of people could have ended up living in the Jordan Valley is entirely possible. It seems, however, that this debate got stuck in the terminology, or nomenclature, of who these people were, which in turn detracted from studying the exact origins of the objects these theories were based on. One should keep in mind, however, that pots do not equal people. However, the presence of intrusive elements in the local material assemblages should be explored further (e.g. Van Wijngaarden 2008). This might be a worthwhile endeavour for a future study.

While the Egyptian presence in the Jordan Valley is more rooted in the archaeological evidence, the exact scope of their influence in the Jordan Valley is not yet well understood. Beth Shean was most certainly a garrison town, functioning as a regional centre from which to collect tax, and Tel Rehov's safety and stability during the 12th century BCE was most likely guaranteed by the presence of this Egyptian garrison. However, the situation east of the Jordan Valley is much less clear. While numerous Egyptian-style artefacts and architecture were encountered during excavation in this area, it is as yet unclear whether Egyptian hegemony reached the east bank of the Jordan River, or if the connection to the Egyptian sphere of influence was on a more voluntary basis, for example on the basis of trade.

Concerning the evidence for metallurgy in the Iron Age I Jordan Valley, the conclusion can be drawn that while evidence does exist for metalworking, it only appears to be attested at one site: Tell Deir 'Alla. While several other sites in the immediate region yielded numerous bronze objects, this hardly warrants ascribing the Jordan Valley as a metalworking centre for the region, as postulated on the basis of the biblical narrative. What did clearly come forward from this debate, however, is that mobility in the Iron Age I was not exceptional. The inhabitants of the Jordan Valley were most likely often oscillating between mobile and settled life, depending on climate, crop yield, and internal or external threats.

Tell Deir 'Alla appears to be a key site in understanding the changes which occurred during the end of the Late Bronze Age and the subsequent Iron Age I. It is inhabited almost

continuously throughout the 12th century BCE, shows signs of a shift of settled to nomadic habitation at site, and may show evidence for large-scale metalworking. This, combined with the relatively scarce data from Iron Age I excavation in the Jordan Valley, makes the Tell Deir ‘Alla archive a valuable dataset, worthy of further investigations. As phases A-D seem critical in all of the debates regarding the 12th century in the Jordan Valley, these phases warrant revisiting which will be done in the following chapter.

Chapter 4: The Tell Deir ‘Alla phase B installations

“Ideally, as cities and towns are constructed upon the ruins of previous settlements, the archaeological mound increases in size with layer-cake stratigraphy. In reality however, the stratigraphic buildup is rarely so orderly” (Rosen 1986, 9).

4.1 – Phase B and the installations

Franken’s identification of a metalworking industry at Tell Deir ‘Alla in the earliest phases of the Iron Age has had a significant impact on the narratives relating to life in the Jordan valley during this period. While Franken’s research was thorough and diligent, the focus of his research on matters of pottery chronologies did not allow for an in-depth analysis of these interesting contexts. Due to their wider relevance in the understanding of the Iron Age I, this chapter aims to dig deeper into the original documentation relating to the so-called ‘Phase B furnaces’. In this chapter the stratigraphy and archaeology of the associating layers will be explored. Tell Deir ‘Alla Phase B belongs to the so-called ‘first period’ (phases A-D as published by Franken (1969, 33)), a period attributed to semi-nomadic habitation of the mound following the Late Bronze Age destruction (e.g. Franken 1969, 38; Van der Steen 1996, 68). In general terms the period is characterised by a limited amount of architecture, a large quantity of dug pits, and accumulations of courtyard layers. This ‘first period’ started with the repurposing of the remaining standing architecture of the LBA sanctuary, possibly for shelter.

4.1.1 – Tell Deir ‘Alla during the ‘First Period’

Franken subdivided the stratigraphy of the Iron Age I at Tell Deir ‘Alla in two main periods: the ‘First Period’ (Phases A-D), and the ‘Second Period’ (Phases E-M). The former, which is the focal point of this thesis, begins when the remaining Late Bronze Age architecture was used for ‘squatter’ habitation (Phase A). The remains of the Late Bronze Age sanctuary were cut into, as attested by many dug pits and a large depression of around 2 meters deep. These

features gradually filled back up with wash layers containing Iron Age I pottery, but were still intermixed with Late Bronze Age pottery. Franken attributes this to the digging activities at the site, which resulted in the inclusion of Late Bronze Age material in the Iron Age I assemblage. The large 2 meter deep depression was, according to Franken, used for storage of fuel such as brushwood. This fuel caught fire and burnt over at least the entire excavated area, resulting in ashy patches of a white and pink colour, sometimes as much as 20 cm thick. This fire caused the last standing architecture from the Late Bronze Age to collapse, and subsequently wash over the accumulated Iron Age I layers (Franken 1969, 33-34).

In Franken's publication of the Iron Age I stratigraphy, this is where Phase B starts. A sequence of three installations positioned one atop the other were observed, with possible evidence for at least one more directly north of the former three, dating to Phase B (Franken 1969, 36-37). According to Franken, these installations were enclosed by four mud-brick walls, creating a square shape (see figures 26 and 27). The original inside width of the installations was approximately 2 meters. Excavating this phase proved somewhat problematic due to several substantial cracks running through this area (see figure 21), causing the stratigraphy to sink at several places. Franken notes that the cracks would dry out during the excavation, causing the soil to shift up to 20 cm (Franken 1960, 389; Franken 1969, 38).

After the last use-phase of the Phase B installations, they were destroyed. Subsequently, numerous small layers began to cover the installations, marking the beginning of Franken's Phase C. While two new walls were built on the remains of the installations, it is unclear what how they can be interpreted. This area in Trench D was heavily weathered due to its proximity to the tell's surface. Numerous layers containing burnt clay are deposited, often with pits dug into them.



Figure 18: Entry to one of the installations, most likely D148, looking north. Note the black-burnt surface (from the Tell Deir 'Alla archive).

4.2 Stratigraphic analysis of the Phase B excavation trenches

A starting point had to be defined to begin working with the Tell Deir 'Alla archive and explore its potential. To this end a well-defined context had to be chosen, small enough to allow the author to investigate it in the span of this MPhil research, and significant enough to contribute to the current scientific discourses. The Phase B installations met these criteria, and therefore were chosen as a 'pilot study' for the current research. As the Phase B installations fall largely within two trenches, Trenches D100 and D500, and the overall chronology of Phase B is most clearly represented here, this provided a well-defined and manageable starting point. As mentioned above, the relevance of these installations for the Iron Age I Jordan Valley made these all the more appealing. While they are discussed in the literature, their archaeological contexts haven't been fully published yet. While it still proved a substantial task to get fully familiarised with the excavation system and the documentation, the selection of the Phase B installations as the focal point of the current research and the limiting of the analysis of the stratigraphy to these two trenches, provided a realistic starting point for working with the Tell Deir 'Alla archive.

In this section a detailed analysis of the stratigraphy of the Phase B installations will be provided. As mentioned above, the preceding Phase A is very clearly visible in the stratigraphy. It appears as a dense sequence of wash layers, as described by Franken. In the subsequent period many changes occur, as suddenly various phases of building activities can be observed. Franken already reflected this in a change of stratigraphic phase, ascribing the subsequent phase as Phase B. This division still holds true, which is why it will be adopted in this thesis.

4.2.1 – Data from the archive

While nothing is guaranteed when working with old archives, a surprising amount of data concerning the Phase B installations could be retrieved. Apparently, Franken had already realised in the field how important the Phase B installations would become, as these features are covered relatively generously in the archive. Numerous photos document the features, as well as various drawings, sections, and sketches in the fieldnotes by Franken himself. Apart from the usual drawings, which were made for every excavated square, smaller and targeted top-plans and cross-sections were also drawn. Below is a summary of what the archive contains regarding the Phase B installations.

Sections

As was usual for every excavated Trench, all the sections in the sub-squares of D100 and D500 were drawn. However, due to the steep slope towards the north of trench D no north-section was made for sub-square D100. This was not unusual, as Franken applied the ‘walking baulk’ method described in chapter 2. Instead, the south section from adjoining square D500 is referred to, as an ‘inverted’ north section for square D100, and is documented as drawing DIIb (see figure 22). The regular section drawings for sub-square D100 are DI (the large eastern section covering the entirety of Trench D, see figure 9 and figure 24), DIIa (the south section), and DIII (the west section, see figure 25). Apart from the regular section drawings, which were made for every excavated square, smaller cross-sections of soundings made to clarify the stratigraphy were also drawn.

Top-plans

As with the section drawings, Trench D100 had several major top-plans, being D1, D2, D3, and D4. These top-plans all portray the Phase B installations, in various stages of the excavation process. D4, for example, shows the situation when the installations are encountered. D2 shows remains of the first use of Phase B, as well as some Late Bronze Age architecture. D3 shows the first installation (see figure 26), and D1 the latest (see figure 27). Other than these drawings, which were made in the field, summarizing drawings were made combining all of the top-plans. In these the furnaces are plotted one atop the other. Other than these drawings, the archive also contained several smaller top-plans from Phase B. These are often difficult to trace back to their stratigraphic location, as not all of them contain clear measurements for the grid system.

Fieldnotes

The fieldnotes relating to Trenches D100 and D500 are in one single notebook. The fieldnotes were written by Prof Dr H. Brunsting, a Dutch archaeologist, who was the sole supervisor of the excavations of Phase B in Trench D (see figure 19). The fieldnotes pertaining to Phase B were written between 8 February and 27 March 1960, indicating it was excavated over the period of roughly a month and a half. The fieldnotes vary in quality and content, with certain deposits being described in much greater detail than others. References are made to the section drawings and top-plans, and certain sketches and excavation strategies explain decisions made in the field. The overwhelming majority of the fieldnotes, however, describe very briefly what work was done in what area of the trench. This leaves out descriptions of the deposits that were excavated, as well as the precise location of many finds, complicating stratigraphic analyses.

Some examples are listed below (translated from Dutch). In bold are later additions which Franken made while going over the fieldnotes.

8.2.60 – “D502: underneath 501, upper part (=southern part). Several mudbrick-walls (close against the southern section)?

Charcoal, ochre.

*N.B. The southern part of D500 is situated at 25 m. along the datum line. Found a Scarab some 10 cm. east of Trench D, on surface of the tell (**Ramses II**).”*

29.2.60 – “D145, continued: aforementioned strip widened, and deepened the western half, except for the section. Excavated around 35 to 40 cm.

To the north, on the border between D100 and D500, in the eastern half clearly a wide (city) wall of ca 1.20 m. wide. In the section a perpendicular wall.”

12.3.60 – “D148 continued.

D149 eastern “oven” (turned out not to be an oven) (?) **149 needs to be split: north and south of wall D7.**

D509: continued.

D150: “city wall” above the oven 148 and to the east of it, heap of stones on the corner at A apparently perpendicular: several layers, several rather large.

In eastern part in middle of the wall (**2nd phase**), many bones (~~burnt~~ **offering?**)”



Figure 19: Prof H. Brunsting, supervisor of Trench D100 and D500 in the 1960 excavation season (from the Tell Deir ‘Alla archive).

Photographs

Thus far a total of 55 separate photo’s portraying information from Phase B in Trench D have been recovered. They vary in quality, and it is apparent that several times multiple photographs were shot of the same feature at more or less the same angle. These were likely made with the ‘Miranda’ camera (see figure 18), which often required taking several of the

same shots to ensure a positive outcome when processing the negatives. The majority of these photographs capture one or more aspects of the Phase B installations, indicating these were a clear priority for the excavators.

Metal Samples

As mentioned in chapter 2, a box of metal samples was encountered among the Tell Deir 'Alla archive (see figure 20). These samples were placed in plastic bags with the number of their deposit written on the bag. Two metal samples originate from Phase B in Trench D: sample D503 and D156. Their exact provenance is unknown, as Franken did not describe the sampling strategy in his publication, and they are not mentioned in the fieldnotes.



Figure 20: Box of metal samples as encountered in the Tell Deir 'Alla archive. Note the text: 'samples Rothenberg', referring to Prof Beno Rothenberg (from the Tell Deir 'Alla archive).

4.2.2 – Franken's publication of Phase B

In the 1969 publication, Franken published his stratigraphic interpretation of Phase B (Franken 1969, 36-40). While he published several top-plans, as well as a cross section of the installations, these were summaries of the actual drawings. Franken's main goal for the 1969 publication was to publish the pottery chronology, which should be kept in mind when interpreting the stratigraphy on that basis. He published the walls with different numbers than the ones used in the field, but did keep the original deposit numbers. This makes

retracing his steps somewhat complicated, as the variety of numbers in the 1969 publication do not reflect the documentation in the archive, which is less detailed.

Franken identified 5 sub-phases in Phase B, based on the stratigraphy. These cover the entire period that the furnaces were in use, the first of which he postulates was likely built in the very last part of Phase A. He notes that the east, west, and south walls of the installations form the installations' shape, which stays more or less the same throughout Phase B. Franken recognised three separate installations, but the first one was dug through a possible earlier one constructed in Phase A. As such, a sequence of 4 installations was recognised, all constructed one atop the other. The exact outline and location of the phase A installation could not be retraced, but the walls from the first Phase B installation were cut down into the older walls.

The installations do vary somewhat in shape. The first one, D153, appears to have two small and narrow openings protruding towards the north. The opening was wider for the second installation, but for the third installation appeared blocked. These openings appeared to shift slightly northward with each new building phase. Stones were incorporated into the walls of the chambers of the first installation. These stones had split from heat exposure, and were coloured dark red. The consistency of the floors was hard, and they'd burnt to a depth of ca 5 cm. Burnt clay made up the fill beneath the installations, and the soil around them contained burnt clay particles and "many tiny drops of metal" (Franken 1969, 36-38). Franken was quite brief in discussing the actual stratigraphy of the phase, and doesn't explain on what basis the sub-phases were divided.

Franken makes an interesting side-note in his publication, which is relevant for later interpretation of the installations. As it is part of his initial interpretations and described the archaeological deposits, it should be mentioned here:

"It is however a curious fact, that slag was only found in large quantities from phase E onward. And this is not slag from melting metals but from the burnt walls of kilns or furnaces. It can be found in masses near the kilns of the modern potters village of Kerami. From the present evidence the accumulation of deposits on the tell in this period has to be explained mainly by the destruction of furnaces and moulds, and this is possible as these deposits contain a large amount of burnt clay particles, and ash in patches or large stretches in abundant. Slag and stones were probably systematically removed from the surface by the smiths and thrown down the slope so as not to get mixed in the clay used for moulds. The villagers from phase E on brought it back while quarrying for their houses" (Franken 1969, 38).

Franken published a list of deposits relating to Phase B in the 1969 publication, which is summarised below for Trench D.

Phase B

Sub-Phases	Field-Numbers	Description
Sub-Phase B1	D155, D157	Furnace walls 2-6, built on a surface which was burnt black
	D145, D505, D506	Clay debris against the walls
Sub-Phase B2	D153, D503	Clay debris in front of 2nd furnace
	D152, D154, D156	Occupation levels covered by burnt debris
	D146	Debris inside furnace
Sub-Phase B3	D502, D503	West of furnace wall, clay debris
	D151	South of furnace walls, occupation levels covered by burnt debris
	D148	Furnace debris
Sub-Phase B4	D149	Clay debris east of wall B 4
	D150	Clay debris with ash and black-burnt surface

Table 3: Subdivision of phases with corresponding field-numbers from Trench D100 and D500 (after Franken 1969, 39-40).

4.2.3 – Re-evaluating Phase B’s stratigraphy

With the data gathered from the archive the chronology of Phase B could be re-evaluated. The cross-sections proved a reliable starting point for analysing the stratigraphy, as it was clear that they were complete and relatively detailed. All the sections were joined together to see if Franken’s sub-phases could be recognised, and if reinterpreting the stratigraphy could elaborate his analyses. Fortunately, all the sections could be connected neatly to one another. This made interpreting phases in the stratigraphy possible, and thus also re-evaluating Franken’s subdivisions. However, as mentioned above, large cracks in the sections do very much complicate this stratigraphic picture, as deposits appeared to indeed have shifted over 20 cm at certain places.

While several top-plans were made for the different phases of the installations, these did not appear to connect well to the sections. On the top-plans several height-measurements were

indicated. However, in various cases the areas connected to the sections were left blank, or the planned deposits and features simply did not correspond to those indicated on the sections. As such, it often remained unclear where exactly a wall was supposed to enter the section, or which deposit in the section connected to which deposit in the top-plan. In short, while containing valuable information, horizontally the documentation, especially with regards to the top-plans, is less than ideal.

Another complicating factor was the observation that several layers had shifted and subsided throughout time. Apart from the obvious consequences of large earthquake cracks, it appears that the pressure of the top of the tell caused layers to shift downward in the centre, and outward towards the edges, as attested by the light curve of the various interfaces. By consistently measuring the lowest point of the sub-phases, the relative differences in elevation will provide an idea of the thickness of the layers, and how quick building events follow one another. For that purpose, in the analysis of the stratigraphy a rough estimation of the elevation relative to the fixed point on the mound will be provided, consistently measured from the lowest point of the deposit. These heights will be used to connect the top-plans to the sections where possible.

[The reinterpreted chronology](#)

The stratigraphy of the Phase B is clearest in section DIIb (see figure 22), of which Franken also published a version in his 1969 publication (Franken 1969, 38). As mentioned above, this is actually the south-section of Trench D500, and as such should be taken as an inverted north section for Trench D100. Here the sequence of the successive Phase A wash layers is very clear, as are the changes that occur at the start of Phase B. The south-section of the installations, an unnamed section, does not show this transition, as south of the installations the situation does not appear to change much in comparison to Phase A. Unfortunately, this section does not cut the southern part of the installations, resulting in a lack of coverage for the installations' building sequence on the southern part. Instead it covers the area just south of the southern walls, where it shows a sequence of accumulated layers covering Phase B. The west-section, section DIII (see figure 25), also shows the chronology very well, with Phase A represented by an accumulation of wash layers, and construction events marking the beginning of Phase B. However, the area of the installations is represented here by a single mudbrick wall, marked as D7, with numerous cracks through the middle, complicating distinguishing separate building phases. The east-section, Section DI (see figure 24), is more

helpful in this regard. It also shows the transition from Phase A to Phase B, and clearly contains several construction events regarding a mudbrick wall. Numerous layers run up against this east-west oriented wall, which is marked on the section as walls D7 and D9.



Figure 21: Trench D100, looking south from D500. Visible is the heavily burnt surface of one of the installations (also visible in figure 18), and the various earthquake cracks complicating the stratigraphy in this part of the tell (from the Tell Deir 'Alla archive).

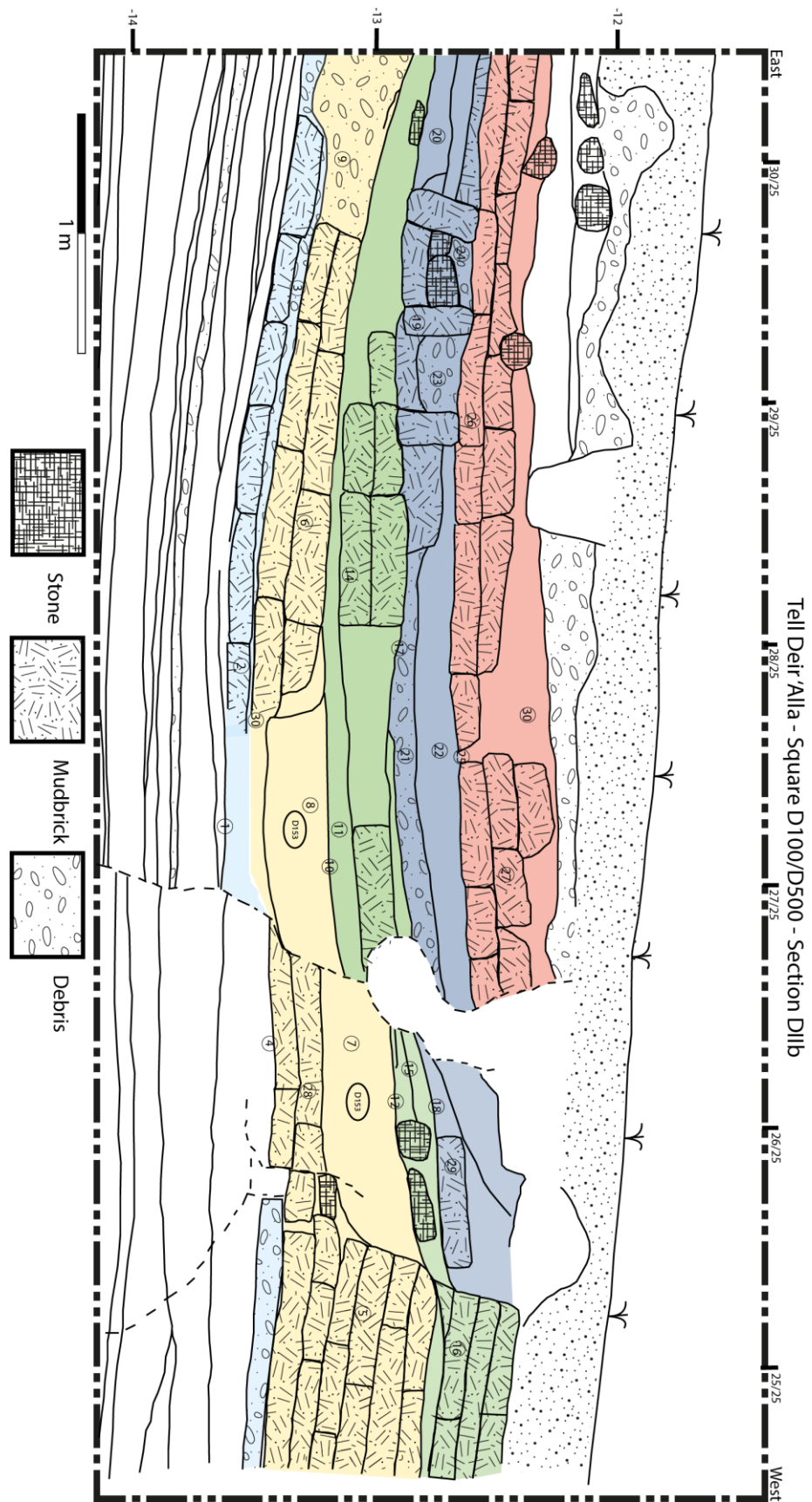


Figure 22: Section DIIb, between Squares D100 and D500. Colours correspond to the different Sub-Phases in the Harris matrix (see figure 23).

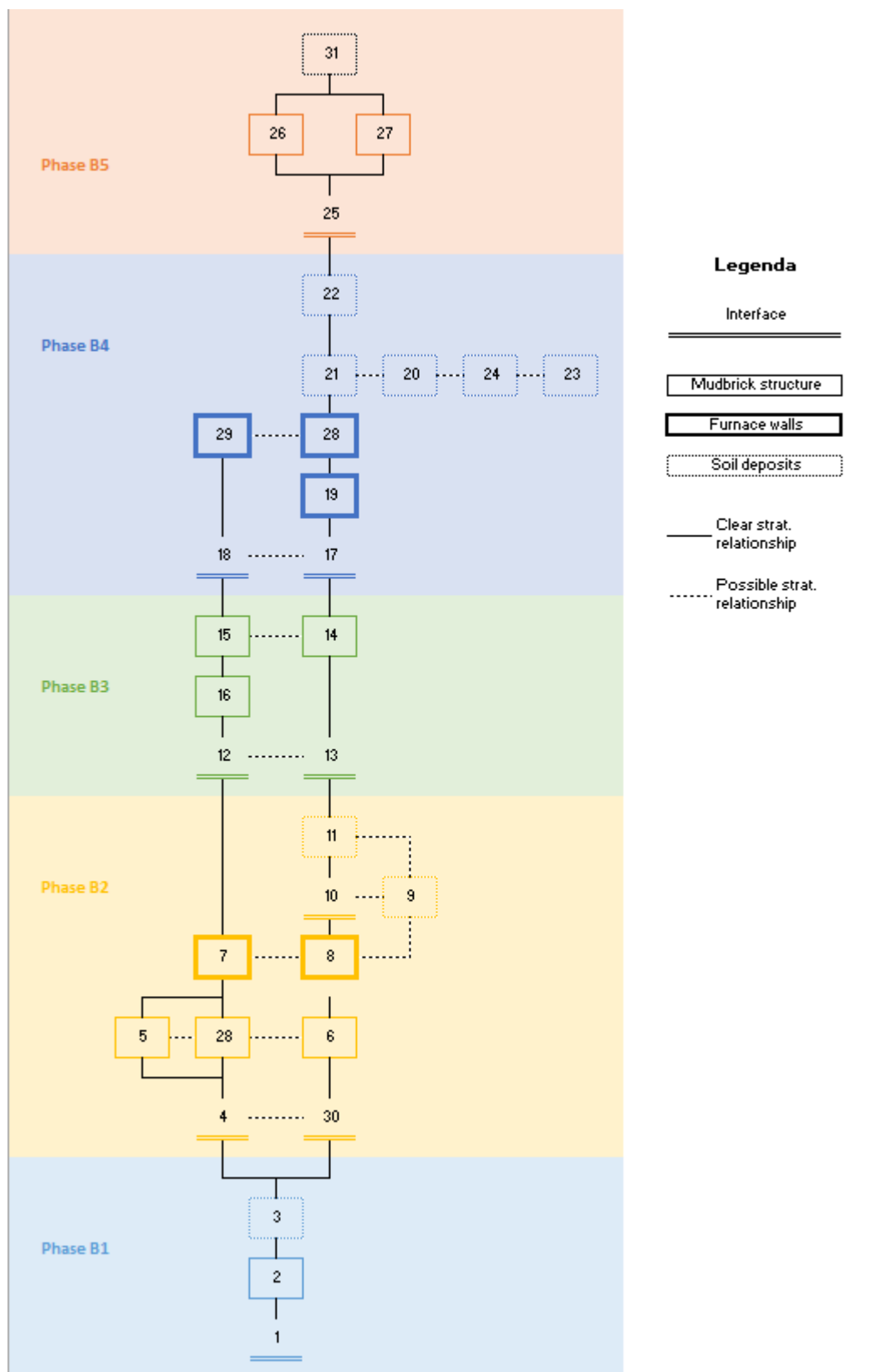


Figure 23: Harris matrix of the Phase B installations. The various Sub-phases are described as B1 to B5, also visible section DIIb (see figure 22).

<u>Stratigraphic unit</u>	<u>Nature of Deposit</u>	<u>Corresponding Excavation Number</u>
1	Interface	
2	Mudbrick Structure	
3	Soil deposit	
4	Interface	
5	Mudbrick Structure	Wall D7
6	Mudbrick Structure	D505
7	Furnace	D153
8	Furnace	D153
9	Soil deposit	D503
10	Interface	
11	Soil deposit	
12	Interface	
13	Interface	
14	Mudbrick Structure	
15	Mudbrick Structure	
16	Mudbrick Structure	
17	Interface	
18	Interface	
19	Furnace (airducts)	
20	Mudbrick structure	D149
21	Soil deposit	
22	Soil deposit	D503
23	Soil deposit	
24	Soil deposit	
25	Interface	
26	Mudbrick structure	Wall D9
27	Mudbrick structure	
28	Furnace	
29	Furnace	
30	Interface	
31	Soil deposit	D502

Table 4: List of stratigraphic units visible on section DIIb (see figure 22), and used in the Harris matrix (see figure 23).

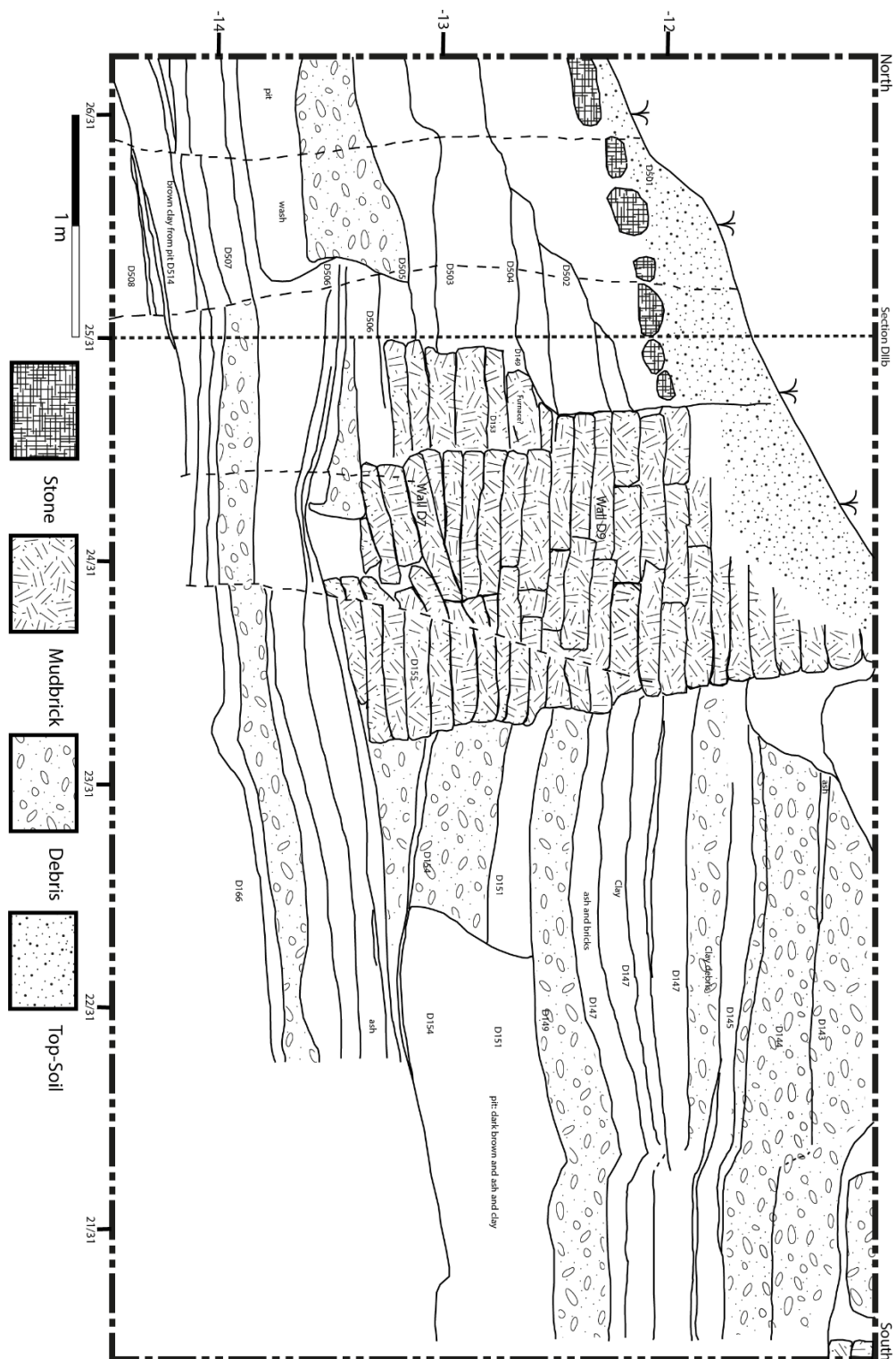


Figure 24: Part of section DI.

103

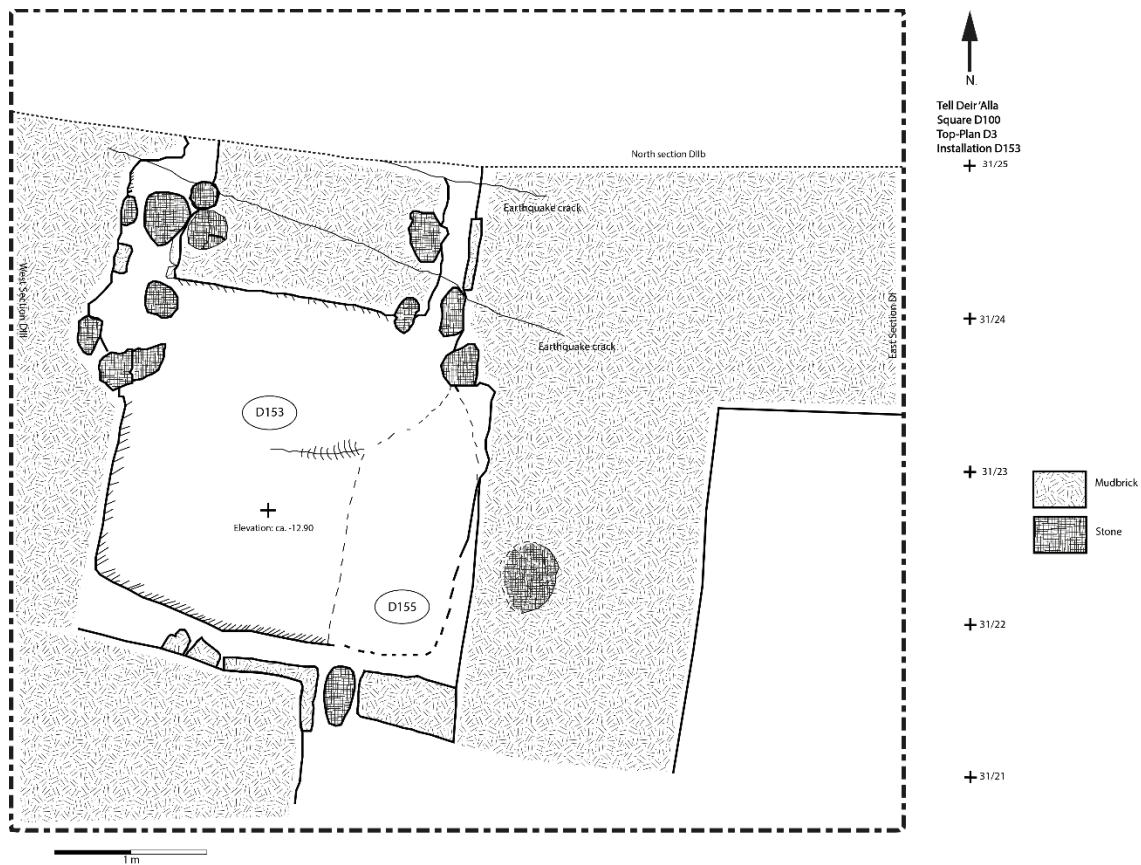


Figure 26: Top-Plan D3, showing the earliest recognised installation floor, corresponding with Sub-phase 2.

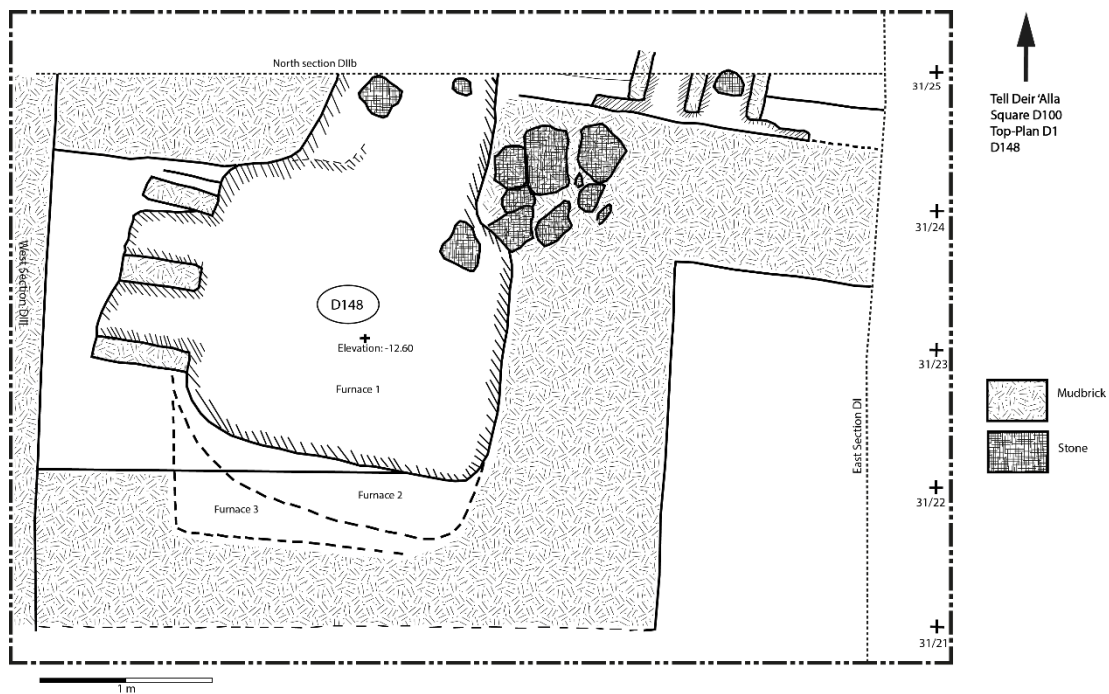


Figure 27: Top-plan D1, showing the latest installation (D148) corresponding with Sub-phase 5, along with Franken's proposed outlines of the earlier installations. Note the 'air-ducts' in the north-east corner, protruding from the mudbrick wall, and the upright mudbricks forming niches on the eastern side.

From these sections, most clearly exemplified through section DIIb of which a Harris Matrix and section drawing is provided (figures 22 and 23), the sequence of events outlined below was reconstructed. The finds from Phase B were traced back to their original sub-phase, and listed below. As the pottery is already published in the 1969 publication, only their registry numbers and category are added. For the other find categories a small description of the object is added, and where known, their approximate find location.

Sub-phase I

After numerous wash layers, a mudbrick wall was built in an east-west orientation (unit 2), roughly at 13.70m. This wall is clearly visible in section DIIb (see figure 22), and might be visible in section DI (wall D7 cuts a smaller wall with wide flat bricks, which might be the same feature, see figure 24). Layers associated with this sub-phase are described in the fieldnotes as burnt, containing a lot of charcoal.

Unfortunately no top-plan was made for this sub-phase. Also, no detailed information exists regarding to the find-locations of the associating objects.

Associated finds from Sub-phase I

Pottery:

DA.155.4 – Pedestal bowl, type 8a

DA.156.7 – Deep bowl, type 4d

DA.156.12 – Pedestal bowl, type 8a

Ceramic objects registered as small finds:

DA.156.860 – Small bowl. Ca. 3 cm. large object, blackened by heavy burning. Described in the register as a “miniature lamp”

Ground stone objects:

DA.159.967 – Mortar base. A red sandstone mortar base

DA.506.145 – Grinding stone. A basalt upper grinding stone, measuring 34.4 by 11 cm

DA.506.229 – Quern. A sandstone quern, measuring 40 by 27 cm

Metal samples:

Metal Sample 156 – a small metal fragment, copper or bronze

Sub-phase 2

The area was completely levelled (unit 4&30), as is visible in section DIIb, at roughly 13.50. Afterwards a substantial wall was constructed on the western side (wall D7 on DIII) which likely connected to the bricks seen in Section DIIb (unit 6). These walls belonged to the first installation, of D153. The opening which is visible from D154 in section DIIb appears cut into the wall, indicating the wall was likely opened at a certain moment in time. Subsequently the opening in the oven filled up (unit 7&8), as did an area just east of the installation (unit 9). Most of this sub-phase was then covered by another fill, possibly to even out the surface once more (unit 11). Though visible in the sections, the layers from this sub-phase are not described in the fieldnotes.

This sub-phase includes the earliest of the recognised installation floors, which is depicted in top-plan D3 (see figure 26). The centre of the floor was measured at 12.90 height in the top-plan drawing, but at the opening in the wall of the installation it is noted that the surface dropped 35 cm downward, placing it at approximately 13.25. The top-plan for this sub-phase of the installations shows a square feature, with a demarcated surface area (D153). This surface is described as heavily burnt in the fieldnotes. It has an inner dimension of ca. 2.20 by 2.20 meters, but the outer walls are not clearly drawn. Several stones can be observed on the outer walls of the installation, as well as specifically drawn mudbricks. These stones were described in the fieldnotes as “wall-reinforcements”. Furthermore, there appear to be two narrow gullies toward the northern edge, which are described in the drawings as ‘air-ducts’, which were apparently heavily burnt. These gullies are not visible in the DIIb section, which instead shows an uninterrupted fill of ca. 27 cm thick. The top-plan shows that in the inner south-eastern corner of the installation a ‘test trench’ was excavated, as D155. The fieldnote entry for D155 states that a cross-section was made for this test-trench, but unfortunately this drawing was not encountered in the archive. Again, no clear descriptions exist as to the original locations of the finds from this sub-phase.

Associated finds from Sub-phase 2

Pottery:

DA.152.1 – Pottery stand

DA.153.3 – Base, type 3

DA.153.9 – Base, type 4

DA.153.16 – Bowl, type 4h

DA.153.17 – Jar, type 2d

DA.153.279 – Pedestal bowl, type 16

DA.154.2 – Bowl, type 4h

Ground stone objects:

DA.154.884 – Bowl. A basalt stone bowl, with only one remaining leg

Sub-phase 3

At the start of Sub-phase 3, the entire area was levelled again (units 12&13; possibly D149 on DI), at roughly 13.20m. This event also took down part of the large western wall (unit 5; wall D7 in DIII), and possibly also part of the eastern wall (wall D7 in DI). Another western wall was then built, again north-south in orientation (unit 16; possibly D148 on DIII). Mudbricks can be observed in east-west orientation along section DIIf, suggesting that another wall was built enclosing the northern part (unit 14&15). The eastern section here is quite unclear, due to the levelling activities of the next sub-phase (possibly DI 149?). According to the fieldnotes, this sub-phase contained the charred remains of a large 'tree-trunk' or 'roof-beam', which yielded a lot of charcoal.

No top-plan was made for this sub-phase, and the find location of only one item belonging to this sub-phase was described.

Associated finds from Sub-phase 3

Pottery:

DA.149.14 – Cooking pot, type 1b

DA.149.24 – Deep bowl, type 4d

DA.149.25 – Bowl, type 9

DA.149.27 – Jar, type 2d

DA.150.5 – Cooking pot, type 1b

DA.504.136 – Decorated jar

Ceramic objects registered as small finds:

DA.150.250 – Tuyère. This burnt-clay blow-pipe was heavily burnt, made from clay, and contained a small copper droplet on the inside of the nozzle. The tuyère was found at exactly 12m deep, against the outside of the east wall, along with numerous broken animal bones.



Figure 28: DA.150.250 – Tuyère (from the Tell Deir 'Alla archive).

DA.150.253 – Pottery stand. A decorated pottery stand possibly depicting dancing figures (see figure 32).

Metal objects:

DA.150.314 – Tanged spearhead/spatula. This approximately 40 cm bronze object was described in the register as a “bronze spatula”, but has several characteristics of a tanged spearhead. It is broken, and was documented to have had a slightly bent point.

DA.504.116 – Javelin point. Object of little over 10 cm. Described in the register as a leaf-shaped javelin point.



Figure 29: DA.150.314 - Tanged spearhead/spatula (from the Tell Deir 'Alla archive).

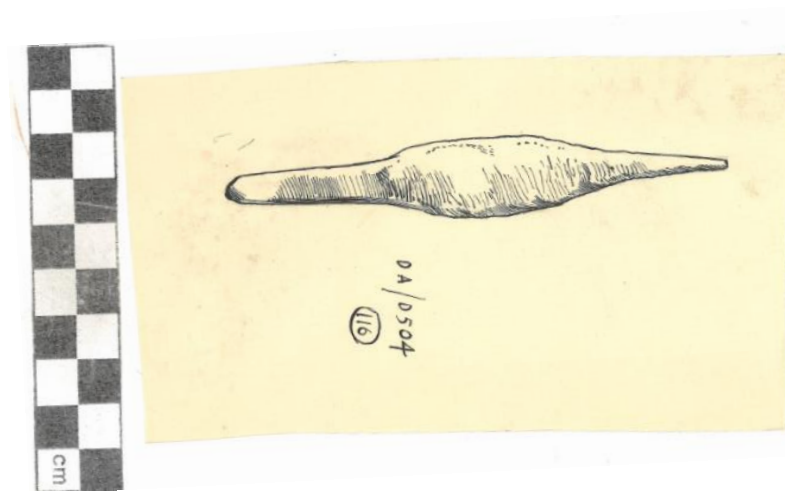


Figure 30: DA.504.116 - Javelin point (from the Tell Deir 'Alla archive).

Sub-phase 4

Most of the area was again levelled (interface 17&18), at roughly 12.90m. Wall 16 was left in place, and likely reused in this sub-phase. A new substantial east-west oriented wall was built in the east, visible as wall D9 in section-drawing DI. In the north section, DI Ib, two newly built 'air-ducts' were constructed (unit 19). It appears that after these were constructed, another east-west wall was built over or around these, possibly incorporating them into a larger structure (unit 28&29). This wall was eventually broken down in the same place as the openings of the other installations, and the surface filled with debris (unit 21&22; D148).

The 'airducts' are visible in top-plan D3 (see figure 27), but no separate top-plan was drawn for this sub-phase. The 'air-ducts' can be seen as protruding slightly in comparison to the other installations. According to the fieldnotes, they contained a small layer of ash on the inside, and the edges of the bricks had been baked to a very hard consistency. Furthermore, the fieldnotes mention a lot of charcoal was encountered in this sub-phase, as well as several "chunks of lime".

Associated finds from Sub-phase 4

Pottery:

DA.151.3 – Deep bowl

DA.503.5 – Jar, type 1d

DA.503.120 – Philistine bowl, complete. Was found on a surface in front of the ‘air-ducts’

Sub-phase 5

While the situation on the western side is quite unclear for this phase, as it reaches top-soil, the eastern side shows that the area was levelled for a final time (unit 25), at roughly 12.70m. Wall D9 appears not to have been affected by this event, and remained in place as attested by various layers running up against it (DI D147, see figure 24). What these layers are is not explained in the fieldnotes. From section DIIb (see figure 22) it would appear that yet another east-west oriented wall was then constructed (unit 25&26), which ran into wall D7 in the east section. This gives an estimation of its thickness, averaging around 1 meter. This east-west wall was eventually broken down, although the part in the section appears to have remained intact. The area between the ruins of the wall was filled with debris (DIIb D502), after which a sequence of layers covered the entire area (unit 31). These layers contain several stones, and the fieldnotes mention that the fill contained charcoal and ochre. Layer D502 runs up against this wall, as seen in section-drawing DI, indicating that this is most likely a debris layer washing down from the decaying mudbrick architecture. An interesting observation done by Brunsting in his fieldnotes, is that he thinks he might have removed part of another structure, similar to the latest installation. This installation would have been located just north-east of the other one, sharing the southern wall. This is questioned by Franken in the fieldnotes, however. No mention was made of a possible second installation in the 1969 publication.

Sub-phase 5 is reflected in top-plan D1. This top-plan shows the latest of the installations. The elevation of the centre of the floor is 12.60. On the plan it was noted that the surface towards the northern edge sloped down 12 cm, fitting neatly with the 12.70m read from section DIIb. This sub-phase of the installations appears to have included a wide opening in the north, which is not visible in the section. This installation contained two upright mudbricks against the western wall (see figure 31), which create three separate niches. Its

surface showed dark patches of charcoal and ash (see figure 18). The surface was apparently heavily burnt, resulting in a hard-baked surface. None of the objects belonging to this sub-phase have been provided with any precise spatial information.



Figure 31: Upright mudbricks creating niches in D148. Looking west (from the Tell Deir 'Alla archive).

Associated finds from Sub-phase 5

Pottery:

DA.146.190 – Bowl type 10

DA.148.2 – Krater

DA.148.3 – Bowl type 13

DA.148.17 – Jar type 2d

DA.148.211 – Pedestal bowl, type 8a

DA.148.213 – Bowl, complete.

DA.148.323 – Jug, complete.

Ceramic objects registered as small finds:

DA.148.324 – Palette

DA.148.325 – Palette fragment

Metal samples:

Metal sample 503 – small metal fragment, copper or bronze



Figure 32: Assorted pottery from Phase B, with the Philistine bowl (DA.503.120) in the upper left, and the decorated pottery stand (D.150.253) to the right of it (from the Tell Deir 'Alla archive).

The end of Phase B

After Sub-phase 5 section DIIb portrays only top-soil (see figure 22), and section DI shows that while the large wall remains standing for a while, numerous small layers are slowly deposited up against it (see figure 24). No new building phases are recognised in Trench D following the installations, indicating that either Phase B came to an end after the final installation was covered, or continued in an area not yet excavated.

4.2.4 – Discussion of stratigraphy

Based on this re-evaluation of Phase B's stratigraphy in Trench D, a slightly more complicated picture emerges than was published by Franken. It is important to state here, however, that only Trench D was researched for this thesis. As Phase B was also encountered in a number of other excavation squares (to be specific Trenches E, F, G, L and M), several of his phases relate to stratigraphic events occurring elsewhere. That said, the stratigraphy of Phase B is most clearly represented in Trench D, and could already be refined just on the basis of analysing this area. This research has recognised five sub-phases in Trench D, which are associated with Franken's sub-phases 1 to 3. While Franken mentions the presence of his sub-phase 4 in trench D100, during the current re-evaluation of the original documentation no stratigraphic units could be linked to this phase. This suggests that two of Franken's sub-phases were not visible in the stratigraphy of this area, and the preceding three sub-phases actually consisted of five.

The sub-phases proposed above likely begin already in the end of Franken's Phase A, when the first mudbrick feature was constructed. While the exact dimensions of this feature are difficult to establish, as it remains only visible in the north section and possibly in the east section, it is proposed by Franken that this was the earliest installation. This is something that is also mentioned in the fieldnotes. Brunsting wrote an entry in the fieldnotes (10/03/1960) discussing the stratigraphy, which mentions that the ovens had 3 or 4 phases, each with its own floor. Only three floors were recognised in the field (D153, D150, and D148), and only two provided with a top-plan (D153 and D148). It is not unlikely that, due to the close superimposition of these layers and the complicated stratigraphic situation caused by the large cracks in the soil, one or two separate floor levels were missed while excavating. Another possibility is that two floor levels were largely erased already in antiquity, possibly during the extensive levelling activities demonstrated above.

Summarising the sequence of events, it appears that there were five building events (all clearly recognisable in section DIIfb) which were all initiated after a levelling event. While these building events appear to follow one after the other relatively quickly, the associated wall in the west section remains largely untouched throughout all five sub-phases, with the exception of one levelling event in Sub-phase 3. This indicates that the general outline of the installations remained the same throughout all five building events, which is reflected in the top-plans. While the installations' east and south walls can only be recognised on the top-plans, the substantial walls visible in the east section, walls D7 and D9, also show

continuation of construction in the same location. The first installation was likely rebuilt 4 times after its initial construction, in more or less the same configuration.

The emerging picture shows a rather large mudbrick installation, measuring around 5.5 by 4 meters, oriented at a slight north-east angle, which was enclosed by four walls. The northern wall did not only cover the northern face of the installations, but continued in an eastward orientation into the section. Sometime after this wall was constructed it was opened in the western half of the trench, in front of the installation, as attested by clear cuts in the walls. The remaining debris then was covered with what is described in the fieldnotes and publication as a “clay fill” (Franken 1969, 36). This process was recognised in the stratigraphy 5 times. While the north wall appears to have been often de- and reconstructed, the east, west, and south walls likely remained more or less in the same position.

This leaves two ‘anomalies’ to investigate, however. The first of these two are the ‘air-ducts’ from sub-phase 3. These protrude slightly from the northern wall, as attested by top-plan D3. From the top-plans and section DI it would seem that the area to the south of these ‘air-ducts’ would not contain any architecture, instead consisting of numerous sequential layers. This might indicate they formed part of a different structure, perhaps located directly north of them. As mentioned above, the trench supervisor noted that he might have removed a similar structure to the Phase B installations to their north, and sketched the outline of this structure in his fieldnotes (see figure 33). This situation, however, would require a north-south wall in the section, which was not recognised.

The other anomaly is the large wall continuing in the east section, walls D7 and D9. These two walls, built one atop the other, appear not to have a clearly recognisable function from the top-plans and sections. There are layers running up against the walls on the north and south sides, but no architecture can be connected to these walls. As they do not appear to have perpendicular adjoining walls in the section, it is likely they continued further into the section, into the unexcavated area east of trench D100. The area east of D500, which is sub-square M200, was excavated by Franken in the 1964 season. Remains from this area mostly belonged to the Late Bronze Age sanctuary, which were published in the 1992 publication (Franken 1992). However, also Iron Age I material was excavated in this sub-square, which was later published by Van der Steen (2008c). This study shows that walls D7 and D9 did not have an adjoining wall to their north, as no such wall was recognised in the stratigraphy (see Van der Steen 2008c, 72). The west-section for this area was not published, however. The results from Van der Steen’s publication will be further discussed below.

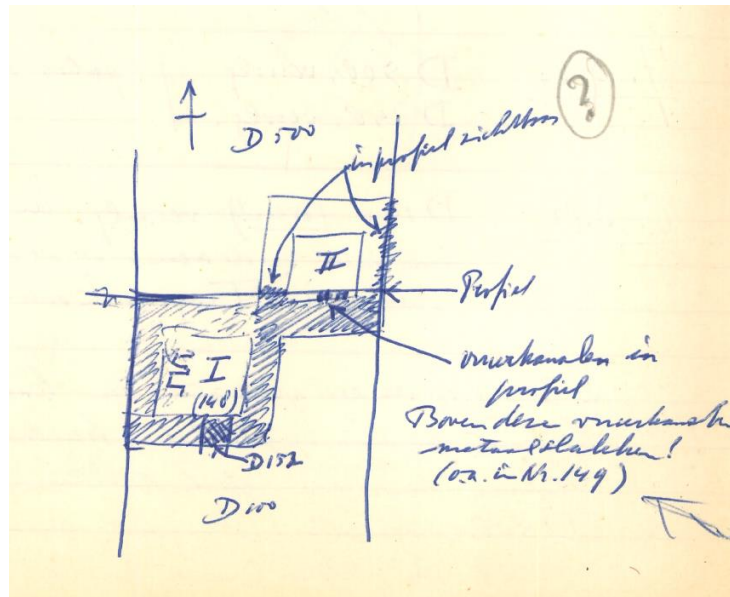


Figure 24: Fieldnote entry discussing the possible outline of a second installation to the north, which might have accidentally been removed while excavating. The walls belonging to the possible second installation are mentioned to be visible in the cross-sections, but this was questioned by Franken as attested by the question mark. The description mentions 'fire channels' (the 'air-ducts'), as well as metal slags (from the Tell Deir 'Alla archive).

4.3 – Interpreting the Phase B installations

With the stratigraphy and contextual evidence presented and discussed, an effort can be made to re-evaluate the interpretations made regarding the Phase B installations. First, Franken's interpretation will be explored. Secondly, this interpretation will be tested in light of new evidence.

4.3.1 – Franken's interpretation

As discussed in chapter 2, Franken interpreted the Phase B installations as bronze-casting furnaces (Franken 1969, 38). What stood out about these features is their unusually large size. The inner width, of around 2 by 2.5 meters, would indicate either large-scale bronze casting, or the casting of very large objects. He puts forward several arguments for this specific interpretation, partly based on a process of elimination, and partly on evidence suggestive of this practice.

The process of elimination regards the possible interpretation of these installations as potters' kilns. This interpretation can't fit with the Phase B installations, as he remarks that in the case of potters' kilns one would encounter numerous fragments of misfires, and none were encountered in Phase B. He also states that the installations could not have been used

for refining bronze or extracting copper from ore, as this process required processing large quantities of copper-rich metal ores, which in turn would result in large quantities of metal slags. Such slags were not encountered at the site, as described above in chapter 4.2.2 (Ibid.).

The tuyère which was found in Phase 3 is brought forward by Franken as evidence supporting the interpretation as a bronze-casting furnace, all the more so as it contained a copper droplet inside its nozzle, and it was found directly east of the installations' eastern wall. Furthermore, he states that *"many tiny drops of metal were found in the soil near the furnaces"* (Ibid.).

This caused him to adopt the theory that the installations were in fact bronze-casting furnaces. He also attributed the many pits attested in Phase B to bronze-casting activities, which he believed were likely used for the storage of fuel. Regarding the stratigraphic deposits from this phase he states: *"From the present evidence the accumulation of deposits on the tell in this period has to be explained mainly by the destruction of furnaces and moulds, and this is possible as these deposits contain a large amount of burnt clay particles, and ash in patches or large stretches is abundant"* (Ibid.).

Interestingly, Franken makes no mention of the fact that several bronze objects were found in Phase B. While the exact reason for this omission is unknown, he may have been saving this evidence for a possible later publication.

4.3.2 – Possible Parallels

Franken's initial interpretation of the Phase B installations as casting furnaces was generally accepted from the time of their publication onwards (e.g. Van der Kooij and Ibrahim 1989, 80; Negbi 1991, 216; Negbi 1998, 196; Van der Steen 2008c, 80). Interestingly, despite their unusual shape and size this notion was never challenged. However, the installations do not appear to fit very well with what is known about how bronze-working looked during the Late Bronze Age and Iron Age I, which will be explored below.

A brief literature study of metallurgical installations in the Late Bronze Age and Iron Age I Southern Levant already shows how much of a lacuna there is in publications on bronze-casting (casting melted bronze into a mould), while numerous volumes are dedicated to the process of copper-smelting (refining copper from copper-rich ores). This appears to not only count for this cultural context but is a wider spread phenomenon in the field of archaeometallurgy (Asmus 2009, 155). Van der Steen's exploration of Late Bronze Age and

Iron Age I metallurgical installations (2008c) is a welcome addition to this lacuna, and provides evidence for just how much of an anomaly the Phase B installations are. In this study she explored various known metallurgical installations from the southern Levant, such as the Tell el-Hesi furnaces, the bronze industry at Kamid el-Loz, the Beth Shemesh installations, Tel Acco's small melting ovens, and the Tel Qasile bronze workshop (Ibid., 80-86).

From this study a clear picture emerges: *"Most of the furnaces ..., whether they were used for smelting (the reduction of copper ore to copper) or for melting (the production of fluid copper or bronze for casting) are small, less than 1 m in diameter. The evidence from Timna shows that the smelting furnaces there were small as well. (...). The largest installations, which may have functioned in the production of bronze or copper, were those of Beth Shemesh."* The Beth Shemesh installations, dating to the 13th century BCE, were just under 2 meters in total size (Grant 1934, map II), as opposed to the Phase B installations' 2 meter inner diameter.

Van der Steen (2008c, 87) puts forward a possible parallel, of a size comparable with the Phase B installations. This parallel comes from Late Bronze Age Qantir-Piramesse, in the eastern Nile Delta, where a so-called "Kreuzofen" (or 'cross-shaped furnace) was excavated (Pusch and Tasiaux 1990; Pusch 1994). The inner dimensions of this rectangular furnace was 3.75 by 2.5 meters, which consisted of a single room divided into several parallel narrow 'rooms'. These narrow rooms were connected with holes, or gates, in their adjacent walls. These chambers were connected to the outside with several channels. Four such substantial cross-shaped ovens were used in connection with "Schmelzbatterien" (or 'melting batteries'), in which crucibles would be heated over two rows of fireplaces to melt copper or bronze. These installations would apparently guide strong winds down into the furnaces, to assist in melting the metal (Pusch 1990, 89). Pusch states that the furnaces were likely used to fire the moulds for large objects, as well as to keep the moulds heated until the casting process would be finished, as the sudden heat from contact with molten metal would result in the moulds breaking.

Based on the capacity of these furnaces Pusch calculated how many crucibles could be in use at the same time, and in how much bronze casting this would result (Pusch 1994, 160-165). The calculations revealed that some 20 crucibles could be used at any given time, resulting in a staggering 36 kg of copper or bronze per shift. The excavators postulate that these substantial furnaces would likely be used for casting large objects, such as bronze doors, making use of a recycle-based economy of re-casting bronze objects. Importantly, no copper-

slags were encountered at the site, only drops of copper or bronze (Pusch and Tasiaux 1990. 91-92). Interestingly, a later study on the crucible remains from Qantir-Piramesse revealed that often the ends of tuyères were contaminated with copper and tin (Rademakers 2015, 108), which brings to mind the Tell Deir 'Alla tuyère with a copper droplet in its nozzle.

Another conceptually similar installation can be found on the southern slope of the acropolis in Athens, Greece. Dating to the middle of the 5th century BCE, it is quite far removed in both distance and time, but there are notable similarities between the Phase B installations from Tell Deir 'Alla and the acropolis installation. Two separate casting pits were encountered using archaeological prospection, called 'anomaly A1' and 'anomaly A2' (Leopold *et al.* 2011, 34-36). 'Anomaly A1' is an L-shaped pit, of a shallow depth of up to 0.8 m., which was excavated in 2006. 'Anomaly A2', discovered only during archaeological prospection, is of an oval shape, around 2-3 m. wide, and with a length of 3-4 m. Protruding from both sides are narrow stairways leading down into the feature, making the total length around 8-10 m. The inner chamber of the installation had a depth of ca. 2.5 m. According to the authors these casting pits were used to cast portions of a well-known monumental bronze statue of Athena, which was a stunning 9 m. in height (Ibid. 28). As workers in antiquity would not have been able to heat pits that deep, the casting would be carried out in portions (Ibid. 39). These portions were approximately 2.5 m. in size, as postulated from the depth of 'Anomaly A2', and were cast with the 'lost wax' technique, where clay moulds were constructed around wax versions of the object. These moulds were then heated, during which the wax would melt, leaving a burnt-clay mould ready for bronze casting. The acropolis installations show similarities with the Phase B installations, first and foremost in their size. Furthermore, in the deposits belonging to the acropolis installations remnants of bronze, bronze-slag, and fired clay bricks were encountered (Ibid. 18), which bring to mind the metal drops and clay slags observed by Franken.

4.3.3 – Alternative interpretations

It is important to explore other possibilities for the interpretation of the Phase B installations, even more so as this seems to not have been done before.

Domestic oven

As attested by the various cooking vessels, animal bones, and grinding stones, there is ample evidence for domestic activities in the area directly surrounding the Phase B installations. This could make one wonder if the installations themselves might be connected to domestic activities, such as bread-baking or cooking. This seems unlikely, however, due to the very

large size of the installation, in contrast to the very limited evidence for habitation at the site. Additionally, domestic ovens were encountered in Square M100, at approximately 10 meters distance from the installations on a paved courtyard. These are round in shape, and are seldom larger than one meter in diameter (Van der Steen 2008c, 76-77). These ovens are common features in all phases at the site, as well as at sites in the surrounding region, and belong to the well-known *tabun*-type ovens.

Lime kiln

Another use one could think of for installations of this size, would be for lime production. Lime was an important part of construction activities throughout antiquity, having been used as mortar and for plastering (Kirca 2005, 91), and was even proposed by Albright to have been a local innovation connected to the Iron Age I settling process (Albright 1960, 113), where lime could be used to plaster cisterns. While research on Iron Age I lime kilns is quite rare, recently an Iron Age I lime-kiln from Tel Hebron was published (Eliyahu-Behar *et al.* 2017). It was a round structure, of around 2 meters in diameter. While the dimension of the kiln fits with the Phase B installations, thick deposits of “loose, crumbly and brittle white material” (Ibid., 19), and white-grey slagging material were encountered in the lime-kiln. This would surely have been recognised by the excavators at Tell Deir ‘Alla, and mentioned in the description of the fills. While several chunks of lime are described in one of the Phase 3 fills, this hardly warrants an interpretation of the Phase B installations as lime-kilns.

Pottery kiln

Given the size of the Phase B installations, one other possibility that comes to mind is that of a pottery kiln. Franken discredited the notion of the Phase B installations being a pottery kiln, but this possibility warrants further investigation. The primary argument he proposes for the identification against the Phase B installations being pottery kilns, is the complete lack of pottery wasters from Phase B, and indeed the entire excavated site. Other aspects to be kept in mind are the unusual shape and size of the installations, and the fact that no sintering was observed on the insides of the installations’ walls. As often observed in potter’s kilns, the inside of the combustion chamber will be prone to sintering, or even full vitrification, resulting in the mudbricks turning for example glass-like and bright green (e.g. Akkermans and Duistermaat 2001, 12), something that was not encountered in the Phase B installations. However, the possibility of the Phase B installations as pottery kilns should not be hastily discredited.

Ann Killebrew's discussion of firing technology during the Late Bronze and Iron Ages periods in the Southern Levant may give some useful insights into the legitimacy of these assertions (Killebrew 1996). Killebrew notes pottery or wasters are actually only very rarely found in kilns (Killebrew 1969, 139), casting doubt on Franken's argumentation. Furthermore, although the round shape usually identified for kilns from this period does not apply to the Tell Deir 'Alla installations, Killebrew observes that, while square kilns were very rare (Ibid., 148), there was a great variety in shape of kilns in the Bronze and Iron Ages: "*no two kilns are identical, either in shape or size*" (Ibid., 139). Another important observation is that in many cases the preservation of kilns is poor, with usually only the lower or subterranean portion surviving (Ibid.). Additionally, in numerous cases holes or channels are observed along the bases of such structures, facilitating the flow of air (Ibid., 136-137).

The argument based on the lack of evidence for sintering inside the installations remains. Throughout her discussion, Killebrew confirms this expected presence of significant vitrification of the combustion chambers of kilns from this period. However, an interesting example of a pottery kiln found at Iron Age I Tel Mique-Ekron forms a notable exception (see figure 34). Though smaller in dimensions, this kiln (4014, stratum VII, Ibid., 146-147) shows striking similarities to the Tell Deir 'Alla Phase B installations. First of all, this kiln is square in shape. Additionally, air vents were found along the base of the structure and an opening in the wall on one side. Similar to the installations found at Tell Deir 'Alla, no wasters or potter's tools were found in its vicinity. Rather, only animal bones and Iron Age I sherds, including from Mycenaean pottery, were found in its fill. Most importantly, Killebrew notes that there is a marked lack of evidence for high firing temperatures inside the combustion chamber, other than a few small fragments of vitrified material. This can be seen as highly similar to the Tell Deir 'Alla installations, where no vitrification of the structure itself is observed, but only some sintered material (albeit found in a likely tertiary context, Franken 1969, 38). The interpretation of the Tel Mique-Ekron installation as being a pottery kiln does, however, still hold. Killebrew importantly explains that the production of the Mycenaean IIC:1b wares found in association with this oven do not require high temperatures, but rather temperatures as low as 600 °C (Killebrew 1996, 147). Interestingly, such pottery is also found in association with the Tell Deir 'Alla Phase B installations, as shown above (DA.504.136, DA.503.120). The absence of vitrified kiln walls has published parallels in Pharaonic Egypt, where much pottery was fired at temperatures below 800°C (Nicholson 2010, 6). Other examples of kilns at Tel Mique-Ekron have mudbrick supports against the back wall in the combustion chamber, which are interpreted as having supported a floor between the

combustion and firing chambers (Killebrew 1996, 148). This again provides a parallel for Tell Deir 'Alla, where a mudbrick support of unknown function was observed in the Sub-phase 5 installation.



Figure 34: Tel Miqne-Ekron pottery kiln 4104, looking east (Killebrew 1996, 141).

Metalworking

While the interpretation of the Tell Deir 'Alla Phase B installations as pottery kilns cannot be fully discredited, it does not explain the presence of evidence related to metalworking. Franken described the presence of numerous metal droplets in the soil around the installations. A tuyère was encountered, which are blow-pipes, used for blowing air into furnaces to reach a higher temperature in metallurgical practices. Furthermore, this tuyère contained a droplet of copper in its nozzle, indicating it had come into contact with molten copper.

Of all the processes involved with metalworking, there are two likely candidates for the function of the Phase B installations. The first would be copper smelting, the refining of copper from ores such as malachite. The tuyère that was found would fit with this process, as they were necessary in heating furnaces to a temperature high enough to extract metal from ore. However, this process requires large amounts of ore to be processed, and can easily be recognised from the high quantity of copper slag it produces. This recognisable slag is

attested at numerous sites in the southern Levant, often associated with metalworking in small furnaces, the temperature of which is easier to control (e.g. Eliyahu-Behar *et al.* 2013, 4320-4321; Ben-Yosef 2016, 184). Franken published that no such copper-slugs were found at Tell Deir 'Alla in his 1969 publication, although he did mention the presence of metal slags in his first preliminary report on the excavations (Franken 1960, 389). The fact that he did not include these in his 1969 publication could mean that this observation was later amended, and the slags he referred to in his preliminary report are the ones described in chapter 4.2.2. Slags are sometimes mentioned in the fieldnotes, but often not conclusively, and never described in detail. It is important to keep in mind that Franken was a relatively inexperienced archaeologist during the first few seasons at Tell Deir 'Alla, having only participated in three previous seasons of excavation, but quickly grew in his professional expertise. Interpretations from the preliminary reports, published after only his first season at Tell Deir 'Alla, should therefore be approached with caution. Also, it is important to realise, that the large majority of these slags were not found in Phase B. Rather they were found in the layers belonging to the later Phase E and onwards, interpreted by Franken as being tertiary contexts (Franken 1969, 38). He argues that in order to keep the vicinity of the Phase B installations clean, the metalworkers discarded the slag further down the slope. When in later phases this area was used for the mining of clay for new mudbricks, these slags became incorporated in the building material. Importantly, these slags were not metal slags (as already mentioned in chapter 4.2.2), but rather clay material which had been exposed to high temperatures.

The other possible metalworking activity this leaves is that of bronze-casting, which was the interpretation favoured by Franken. This would make the installations 'casting-furnaces', or more correctly, casting-foundries. These would have been filled with clay-moulds that would have been heated, and subsequently filled with molten copper or bronze. Another tantalising claim made by Franken in his 1960 preliminary report, is that he encountered numerous broken fragments of clay moulds for casting metal in the Phase B deposits, but none could be restored to their original shape (Franken 1960, 392). However, as mentioned above, these preliminary reports should be approached with caution. Franken attributed the many burnt-clay layers from Phase B to the possibility of broken moulds (Franken 1969), so it would seem that he did maintain this theory. However, none of these partial casting moulds were published, or drawn in the field documentation for that matter. Interesting finds in this regard are the bronze objects found near the installations. The tanged spearhead and javelin point might indicate the type of objects cast here (or recycled for that matter). A final, and substantive argument for bronze-casting is the presence of numerous metal droplets in the

soil surrounding the installations. These would fit well with bronze-casting, as droplets can occur as cast-off when molten metal is being poured (Veldhuijzen in Van der Steen 2008c, 77).

4.3.2 – Recent data

As mentioned in chapter 2, after Franken's 1967 season at Tell Deir 'Alla research continued after an almost 10 year break, in 1976. While the subsequent excavations focussed mainly on the Iron Age II, several excavation seasons also excavated Late Bronze Age and Iron Age I material. In this section, more recent research on the 1960s trenches will be presented, as well as the Iron Age I data from the excavations at Tell Deir 'Alla after the 1960s seasons.

Results from Trench M

Franken did not publish all of the Iron Age I in his 1969 publication, likely due to a lack of time. As mentioned above, Iron Age I layers had also been encountered in Trench M, and specifically in sub-squares M100 and M200. The results from these squares were published by Van der Steen (Van der Steen 2008c), and add to our understanding of Phase B. Trench M contained mainly evidence from Phase A. Towards the end of Franken's Phase A, which in this thesis coincides with Sub-phase 1, the features in Trench M consisted mainly of several small *tabun*-type ovens (M108 and M109) and a raised platform built from large mudbricks (M113).

Several walls were built in Trench M, mainly during this phase. One of these walls, W204, appears to align with the wall from Sub-phase 1 in section DI, oriented east-west into the section. This wall continued around one meter eastward along the section and then disappears, possibly bending southward into the south-section. Apart from this wall a substantial 'double wall' was erected, which according to Van der Steen was also a building technique used in the Late Bronze Age sanctuary. This might indicate substantial building activities in other areas during Phase B, although so far only part of this substantial wall had been excavated.

The Tell Deir 'Alla excavations after 1960

As mentioned in chapter 2, the excavations at Tell Deir 'Alla continued from 1976 onward under direction of Gerrit Van der Kooij and Mo'awiyah Ibrahim (the Department of Antiquities of Jordan), and later Zeidan Kafafi (Yarmouk University). While these excavations focussed mainly on the Iron Age II, several trenches were opened to probe the preceding periods, mainly on the tell's southern slope. The final publications of Van der Kooij's seasons at Tell Deir 'Alla are still in preparation, significantly limiting the amount of data and stratigraphic evidence available for comparison.

One of the significant discoveries of the later excavations at Tell Deir 'Alla concerns the Late Bronze Age occupation. During excavations on the southern slope of the tell a large 'broad room' or '*breitraum*' building was encountered, measuring at least 10 by 6 meters (Kafafi 2006, 590). This building contained several clay tablets similar to the ones found by Franken in the 1960s, providing a clear link between the structure and the Late Bronze Age sanctuary. The subsequent building, constructed on top of the remains of the 'broad room' building, contained evidence for domestic activities. Other architectural discoveries from the excavations on the southern slope and foot of the tell include a possible kiln and a 'pillared-house' (Kafafi 2006, 592-593; Kafafi and Van der Kooij 2013, 129). These results, while not extensively published, indicate that associated with the Late Bronze Age sanctuary was a sizable village. As such, Franken's theory that there was no domestic activity during the Late Bronze Age at Tell Deir 'Alla does not hold. Furthermore, Kafafi and Van der Kooij remark that, based on their recent excavations, there was no break in habitation at Tell Deir 'Alla from the 13th to the 12th centuries BCE (Kafafi and Van der Kooij 2009, 12).

Iron Age I layers were also touched upon during the later excavations. During the 1994 excavation season a sounding was made directly east of square D100, supervised by Eveline Van der Steen. This sounding yielded "... *some ashes and lime. Also a fragment of a crucible (with some pieces of a copper alloy in it) was found there, indicating bronze casting*" (Ibrahim and Van der Kooij, 1997, 104). The presence of a crucible in such close proximity to the Phase B installations is quite significant for their possible link to bronze-casting. However, evidence for metalworking in Phase B was also encountered on the southern slope of the tell. Courtyard layers were recognised here, with an assortment of different materials. One of the preliminary reports mentions that a "*bronze "dagger" (DA 3414) from X/B2.8, with a remarkably long narrow tang (13 cm of the total of 32 cm), rather angular shoulders and a blunt tip*" was found (Kafafi and Van der Kooij 2009, 13). While this object is not published, the mention of its remarkably long narrow tang invoke similarities with the possible tanged

spearhead (DA.150.314) from Phase 3. Another significant find is that of an additional tuyère, found in the aforementioned courtyard layers. This tuyère is seemingly of the exact same make as the one encountered in Phase 3 in Trench D. Lastly, a jewellery mould was found on the southern slope of the tell. While encountered on the surface of the tell, and thus lacking any stratigraphic information, a typological study concluded that the jewellery mould most likely dated to the Late Bronze Age (Kafafi 2008, 255). Due to the portability of such an object, it could be seen as evidence for the practice of itinerant metalworking at Tell Deir 'Alla already preceding the Iron Age I period.



Figure 35: the Tell Deir 'Alla jewellery mould (photo by Yousef Zu'bi in Kafafi 2008, 263).

4.4 – The phase B installations: a renewed interpretation

Based on the data presented above, Franken's conclusions regarding the Phase B installations can be re-evaluated. While the possibility that the installations were used for pottery firing can't be fully excluded, the most likely function that fits most neatly with the archaeological evidence from Tell Deir 'Alla seems to be metalworking. Of the possible functions they could have had in the metalworking process, casting appears the only plausible option.

While the installations would remain somewhat of an anomaly compared to other contemporary metalworking installations, mainly due to their very large size, large-scale

metalworking has been attested in the wider region, as seen at Qantir-Piramesse. The “*Kreuzofens*” from this site are the closest parallel to the Phase B installations, and the Phase B installations might have functioned in a similar way. The Qantir-Piramesse installations made use of strong winds, and strong winds are commonplace during the winter months in the Central Jordan Valley, blowing out of the Zerqa Valley. While no accompanying ‘smelting batteries’ were encountered, not much of Phase B has been exposed at the site. Furthermore the two tuyères and a crucible fragment found at the site hint to the practice of melting metal for casting, as do the metal droplets observed in the soil around the installations, similar to what was observed near the “*Kreuzofens*”.

Accepting this interpretation, the possible *chaîne opératoire* can be reconstructed for the Phase B installations. Towards the end of Franken’s Phase A the first installation was built, enclosing an area of roughly 2 by 2 meters. Clay moulds were then placed inside, and fired. This is attested by the high amounts of charcoal and ash attested in the various fills, and the fact that the installations’ surfaces were heavily burnt. The fired moulds were then possibly buried in sand or soil, to keep them in place while casting. Meanwhile, somewhere nearby the installation, bronze or copper was melted in crucibles, which was then brought over to the installation to be cast. During this process occasional spillage caused some drop-off of metal droplets, which were trampled into the surrounding soil. After the objects were cast, the northern wall was opened, the soil removed, the clay moulds broken, and the cast objects removed. This process resulted in the observed burnt-clay fills, which were observed in between the building phases. The airducts that were observed in Phase 4, and possibly the upright mudbricks from Phase 5, could be connected to the firing process of the moulds, but more research is needed on bronze-casting to clarify their exact function, and their position in the installations’ layout. Each separate installation was likely only usable for one or several such activities, as the area was levelled 4 times in order to build a new one. Throughout this process, only the northern wall appears to constantly be taken down and rebuilt, while the rest of the installations’ walls remained in place. As such, from the excavation data at the site we get an image of prolonged, and likely large-scale, metalworking at Tell Deir ‘Alla during the Iron Age I period.

Chapter 5 – Synthesis and conclusions

“It was not by chance that all the great overland trade routes of antiquity and the Middle Ages were pioneered by nomads or with their participation” (Khazanov 1994, 209).

5.1 – Working with old data

It has become clear during the course of this research project that working with legacy data such as the Tell Deir ‘Alla archive is not without its challenges, and it requires constant re-evaluation of research aims, methods, and possibilities. One can’t start research with such a dataset and expect an outcome completely identical to the initial goals. Instead, it is a constant push and pull of discovering that things are or aren’t possible.

In the case of this research, one of the goals when starting was to attempt to trace finds back to their original find location, and analyse their patterning. This would allow for the generation of new insights into the use of space during this interesting period, which types of activities were done where in the excavated areas, and if change or continuation through time could be observed. It was discovered, however, that the exact original context of only few objects were recorded during the 1960s excavations. This significantly complicated any type of spatial analysis, which in the end proved unfeasible. The resolution of the archaeological data from the Iron Age I was, unfortunately, not high enough. The descriptions of the various excavated deposits are often not detailed, making the exact location, size, and dimensions of excavated deposits, let alone objects, impossible to trace. Sometimes parts could be reconstructed based on the cross-sections or sketches in the fieldnotes, but more often than not these do not connect well. This is also the case for many of the top-plans, which do not always connect to the cross-sections, and are often not provided with height measurements. Furthermore, the fact that sometimes two areas with a difference in elevation of over 2 meters were drawn next to one another on the same plan, significantly compromises their usability.

Another significant challenge was the familiarisation with the dataset. Fully comprehending an excavation and documentation system from nearly 60 years ago is an arduous task, and

certain aspects of the documentation system will never become clear. Much of the information regarding idiosyncratic choices made in the field, which significantly impacted what was and what was not documented, was not written down in the various fieldnotes or diaries of the excavator. Unfortunately, many of these choices can't be retraced anymore, as the excavator has since passed away. It is only by reading between the lines, or even using common sense, that in some cases one can retrace what the most likely course of events might have been. An example of this is the strategy for object photography. A significant amount of object photos were encountered in the archive. However, the 1969 publication makes no mention of an object photography strategy. While at first there was no apparent selection criteria for how or why certain groups of photos were made, after looking through most of the photos it became clear that there was a strong preference for decorated pottery, metal objects, and small finds such as figurines, scarabs, and cylinder seals. Apparently, other categories were not deemed worthy of documentation through photography.

Fortunately, alongside these significant challenges, however, came good opportunities. First of all, preparing the Tell Deir 'Alla archive for online open access has ensured it will be securely stored for future use, and accessible for future generations of archaeologists and other parties interested in its contents. Secondly, in the relatively small area investigated for this thesis the stratigraphy was refined. Although this area is but a portion of that excavated by Franken, it already shows the potential for the rest of the excavated trenches and phases. Furthermore, Franken's publication left all find categories other than pottery out of his analysis. While doing a thorough object analysis on what was encountered in the 1960s excavations was beyond the scope of this thesis, combining such a study together with the refined stratigraphy could potentially improve the chronology at the site even further, increasing its comparative potential for the Late Bronze Age to Iron Age I in the region. Furthermore, the unpublished objects from Phase B that have been discussed in this thesis, such as the tanged spearhead, javelin point, and metal samples, already presented interesting implications for the interpretation of the Phase B installations.

Working with contexts excavated almost 60 years ago has as further benefit that they can now be approached with several decennia of added scholarly knowledge. While Franken was limited to the state of the archaeological discipline of the 1960s, significant advances in archaeological methodologies and techniques have formed since then. Also, certain things that weren't well-known at the time, or weren't known at all, have become commonplace knowledge through the continued efforts of scholarly work on the archaeology of the Southern Levant. A clear example of this is the discovery by Gerrit Van der Kooij and Zeidan

Kafafi of Late Bronze Age habitation on the southern slope of Tell Deir 'Alla, which significantly changed the picture of the site put forward by Franken. Another important example of new opportunities for this old dataset, which did not fit in the scope of this research, is the possibility to do provenance studies on metal objects. Thankfully, several metal samples from the Tell Deir 'Alla excavations were included in the archive, and can be analysed in future studies.

Importantly, much of the data from the 1960s excavations remains unpublished. Working from the data in the archive up to the larger narratives, has shown to contribute to the archaeological knowledge of the Iron Age I. By following the raw data which will become open-access instead of the summaries or published interpretations regarding Phase B, a retraceable, reproducible sequence of choices is presented for other scholars to criticize. The reinterpretation of the archaeological contexts achieved during this research project, now allows for the role of Tell Deir 'Alla in the larger narratives it became a part of to be revisited, revised, or reaffirmed.

5.2 – The Tell Deir 'Alla installations and their repercussions

As shown in chapter 4, the initial stratigraphic analysis of these installations needed refining. Also, their interpretation as metal-casting furnaces was not as straightforward as initially concluded and multiple functions have appeared to be plausible for their use. Nonetheless, the interpretation of them being casting-foundries remains the most plausible.

5.2.1 – Skill and Organisation

The Tell Deir 'Alla jewellery mould (Kafafi 2008, 255) indicates that the casting of small ornamental items was already done at the site in the Late Bronze Age. However, the size of the Phase B installations would indicate that in the Iron Age I period the potential existed to cast objects of substantial size, or at least several objects during the same shift. While the casting of few and smaller items does not necessitate much preparation or large-scale organisation, casting on a larger scale would require significant organisation of skill, labour, and resources. This is a tantalising dilemma when placed in the larger dominant narratives of societal configurations in the Iron Age I, which appears to have been a period where nomadism and permanent settlement are in an oscillating relationship. While still no clear domestic structures have been found at Tell Deir 'Alla dating to the Iron Age I, Franken's

theory of Late Bronze Age Tell Deir 'Alla as a religious place with no contemporary settlement was contradicted by the later discovery of domestic buildings found on the tell's southern slope (Kafafi 2009, 588-589). This indicated that at least during the Late Bronze Age the site contained a small village contemporaneous to the substantial sanctuary's use. While the size and the internationally oriented material assemblage of the temple would still indicate it functioned for the larger area, permanent habitation existed during the Late Bronze Age. A similar situation could hypothetically be the case for the Iron Age I. Kafafi and Van der Kooij have put forward that the more recent excavations at the site proved there was no break in occupation (Kafafi and Van der Kooij 2009, 12). No accompanying domestic structures have been found at the site yet, however. The results from Trench M published by Eveline Van der Steen (2008c) show that building activities during Phase B were not confined to the area directly around the Phase B installations, but that a possibly substantial structure was built farther to the east, in a style similar to that of the Late Bronze Age sanctuary.

Significant building activities might at first glance appear not to fit with the observed aspects of nomadism in the Iron Age I discussed in chapter 3. The archaeology of Franken's 'first phase', Phases A-D with the evidence for tent-poles and the like, does still indicate that the inhabitants of the site may well have been (semi)nomadic. This does not mean, as Van der Steen rightly states in her publication of the Trench M material from Tell Deir 'Alla (Van der Steen 2008c, 89), that the inhabitants were not capable of building significant building works. As attested from 19th century CE tribes in Jordan, mobile populations do engage in the construction of substantial, and sometimes monumental structures. The largely pastoralist Howeytat tribe mentioned by Van der Steen in her publication, built fortifications in various settlements under their control, while maintaining a nomadic lifestyle: "*Howeytat govern the whole district, and their Sheikh has lately constructed a small castle at Tafyle at his own expense*" (Burckhardt 1822, 403).

This shows that significant building activities should not be used as evidence against semi-nomadic habitation at the tell. Further domestic activity is attested at Tell Deir 'Alla during Phase B, reflected through the bread ovens from Trench M, the cooking pots and grinding stones encountered around the Phase B installations, and the fact that Franken mentions flint sickle-blades used for cutting crops (Franken 1969, 21). Identifying whether these activities were done by seminomadic or permanent inhabitants seems to hit a dead end with the current data. On the one hand, the absence of extensive domestic architecture can't be used as evidence against a permanent settlement, as not much of Franken's 'first phase' was excavated. The fact that later excavations proved that the south slope contained Late Bronze

Age occupation warrants caution for such claims. On the other hand, there may not be evidence for permanent occupation in the still unexcavated areas of the site. As it stands, there simply isn't enough evidence to interpret the nature of habitation at the site yet, apart from the fact that during Phase B significant building projects took place as well as several industrial and domestic activities. As such, seasonal occupation is still a valid interpretation, but one that should be approached with caution and warrants further investigation. Evaluations on the plant and animal remains from these phases, which are still in the collections of several Dutch archaeological institutes, may well give insights into aspects of seasonality.

The possible seasonal occupation of the Iron Age I inhabitants of Tell Deir 'Alla is something that provokes the question of where they chose to live the rest of the year. The undoubtable connection of these inhabitants to metalworking becomes even more fascinating when considering the changes in the economic systems taking place in the Iron Age I. The intensification of metal production in the Wadi Arabah most certainly coincides with an increase in people with metallurgical knowhow in the immediate region of the mines, which is to be kept in mind. The mentions by Egyptian textual sources of nomadic tribes in southern regions of Jordan is tantalising in this regard. Furthermore, the fact that the trade routes with Cyprus collapsed, did not mean the need for bronze did, just its steady supply.

5.2.2 – Supply and Demand

As mentioned in chapter 3, the Iron Age I period has often been described as a dark age, in which old trade routes collapse, and long-standing connections disappear. It is abundantly clear that metalworking was practiced at Tell Deir 'Alla from at least as early as the Iron Age I period. In light of the changing economic, societal, and settlement dynamics in the Iron Age I, the question of where the raw materials for metalworking at Tell Deir 'Alla are coming from should be addressed, whether this practice was small or large-scale.

A logistic difficulty would be sourcing the copper. As outlined in chapter 3, one of the hallmarks of the Iron Age I in the Southern Levant was that Cypriot copper mining was significantly weakened following the Late Bronze Age collapse, and it was also postulated that the Egyptian Timna mines were severely weakened (Gilboa 2014, 626). However, recent excavation at Site 30 in Timna have shown that following the Egyptian withdrawal from the Timna mines, in the first half of the 12th century BCE, an intensification in production took place (Ben-Yosef 2016, 191). Interestingly, a similar picture emerges from the Wadi Faynan,

the other richest copper deposit in the Southern Levant. The sites of Khirbeten-Nahas (which quite appropriately means 'ruins of copper' in Arabic) M and S produced clear evidence for copper production in the late 12th century BCE (Levy *et al.* 2014, 29). This shows a picture of local initiatives intensifying copper production at two of the three main copper-winning sites in the Eastern Mediterranean, during a period when trade and commerce are said to have been 'reduced' to local systems. This copper did not only find its way north, but copper from the Wadi Faynan and Timna has also been attested at Tayma in the Arabian Peninsula (Renzi *et al.* 2016, 237), which is indicative of a far-reaching dynamic trade-network. Another possible provenance for bronze to keep in mind, is that which is gained from recycling. This is well attested in the archaeological record (e.g. Yahalom-Mack *et al.* 2017, 61), and has even been related to cultic practices (e.g. Artzy 2000). This is especially interesting to keep in mind related to the religious function of Tell Deir 'Alla, which Franken postulated continued even after the Late Bronze Age sanctuary was destroyed (Franken 1969, 21).

This leaves the question of demand. While not many Iron Age I sites have been extensively excavated, the archaeological record shows that bronze was by no means a rare commodity. This is illustrated by bronze hoards such as the ones from Megiddo and Jatt (Artzy 2012; Hall 2016), or inventories from burials such as at Tell es-Sa'idiyeh and Beth Shean (James 1966, 136-137; Pritchard 1968, 103-104). Additionally, it has even been observed that the repertoire of bronze vessels expands during the Iron Age I, as attested by for example the emergence of so-called 'wine sets' (Pritchard 1965, 17; Tubb 1988a, 245). There is, however, no archaeological evidence from the Southern Levant for very large bronze objects (Van der Steen 2008c, 89). However, large-scale casting projects were done in the wider region, as attested by the Qantir-Piramesse "*Kreuzofens*", and the Egyptian reliefs depicting large scale bronze-casting at the tomb of Rekh-Mi-Re (Davies 1935, 105). The fact that no large bronze objects have been encountered in the Southern Levant thus far could be ascribed to the limited amount of Iron Age I sites that have been excavated, the possibility that such large objects would have been recycled in antiquity, or even that there simply was no market for such objects. The numerous bronze artefacts that were encountered throughout the region had to be cast somewhere, however, and there is no reason to assume a large casting-foundry could not have been used for casting several objects at the same time, instead of just one large item.

While this nuances the picture of the Iron I being 'dark ages', it does not explain the reason for large-scale bronze casting to have taken place so far away from the sources of the raw materials. A small settlement mound in the Jordan Valley receiving copper and tin for large

scale bronze casting, without any known parallels for large bronze objects from the Iron I (van der Steen 2008, 89), nor other such large casting furnaces, make the Phase B furnaces of Tell Deir 'Alla a fascinating anomaly. A hypothetical explanation for the area of Tell Deir 'Alla being selected for this purpose lies in the reconfiguration of trade routes in this turbulent time. The trade connections with Cyprus have ceased, but copper mining in the Wadi Feinan and Timna was intensified. In this period various sites have small copper industries, or at most small industrial areas, but their copper most likely came from the mines in the Wadi Arabah. While formerly metalworking for the Levantine market may have been done in the coastal regions, or nearer to the copper-source on Cyprus, a location was needed closer to the new sources of the raw material, but still at a strategic position relative to the Levantine market. Tell Deir 'Alla held that strategic location for trade towards the north from the Arabah, and would be a logical place for several reasons. First, it is situated at a crossroads. The site was connected to the Amman plateau in the east, through the Zerqa Valley, the hills of Samaria in the west, through the proximity to the ford at Tell Damiyah (Petit and Kafafi 2016, 18) and subsequently up the Wadi al-Far'ah, and the route north to the ford near Beth Shean providing entry to the Jezreel Valley and the Via Maris. From there the trade routes to the Golan Heights, and subsequently the Syrian plains, or the Lebanese Beqa'a Valley are not far away. Dornemann (1983, 1983) already suggested that a trade connection between Tell Deir 'Alla and Syria might have existed in the Iron Age I, and the presence of Mesopotamian cylinder seals at the Late Bronze Age sanctuary shows that material from that region did make its way to the Jordan Valley. Secondly, the specific location at the mouth of the Zerqa Valley was apparently favourable for large-scale metalworking, as attested by the presence of the major Iron Age II iron production centre at Tell al-Hammeh. Finally, large-scale metalworking requires a lot of fuel. Not only was fuel needed to melt the copper to cast, the moulds needed to be heated as well. While the Jordan Valley does not look like it today, it has been described as a "wilderness" and a "tropical jungle" in both the recent and distant past (e.g. Pritchard 1964, 5; Ibrahim and Van der Kooij 1989, 12). The presence of the large-scale iron foundries at Tell al-Hammeh proves that fuel for large-scale metalworking was not an issue during the Iron Age, possibly due to the region being so rich in flora.

There are signs of continuation during the Late Bronze Age and Iron Age I at Tell Deir 'Alla, and perhaps its function as a regional marketplace, as put forward by Franken, also persisted, while the economic systems around it were being reconfigured. Franken postulated that the site might not have lost its ritual function after the Late Bronze Age collapse, and a

subsequent sanctuary may have been constructed somewhere else on the site. The unique context containing the Balaam text that was encountered in Iron Age II layers, could be indicative of a long continuation of a religious function of the site. This is reaffirmed by Franken in his last, posthumous, publication: *“There can be little doubt that Deir ‘Alla as a sacred place remained sacred. Gods may be replaced by other gods, but the numinous character of the place remains unshaken”* (Franken 2008, 40). While no clear ritual buildings have as yet been documented from the Iron I layers, fragments of ritual objects keep appearing in the archaeological record of most occupational phases (Franken 1969, 20), most notably fragments of incense burners. Interestingly, a pottery stand was found in Sub-phase 3, associated with the Phase B installations.

This leaves the question of who the people were that came to Tell Deir ‘Alla following the destruction of the Late Bronze Age sanctuary. Archaeologically, their pottery assemblage was more similar to the east, than the west. Their subsistence strategy may have been (semi)nomadic, although this is as yet debatable. They had intimate knowledge of metalworking, most likely even on a very large scale, and furthermore were apparently capable of cooperation for large-scale building projects. They were in contact with cultures from neighbouring areas, at the crossroads of several important trade-routes. This certainly shows that life at Iron Age I Tell Deir ‘Alla cannot be seen in terms of a period of ‘dark ages’, but rather a period of innovation, reinvention, reconfiguration, and as Margreet Steiner and Ann Killebrew proposed, “Levantinism” (Killebrew and Steiner 2014, 2). Through their building activities the Iron Age I inhabitants invested in Tell Deir ‘Alla, which resulted in their archaeological visibility. However, still many unclear about them and the world they lived in, warranting further research.

5.3 – Future research

The formative period of the Iron Age I needs further research to clarify the important changes which occurred on societal, economic, and political levels. While more is becoming clear from excavations in Cisjordan, the picture remains vague especially on the Transjordanian side. Thus far investigations of the Iron Age I have provided evidence for a complicated process of transhumance and permanent settlement, set in an economic and political landscape. The Jordan Valley has proven to be of exceptional value in casting light on these processes and changes, making future research in this area all the more relevant.

A somewhat obvious solution to the lack of data would be to excavate more Iron Age I layers in sites which have continued occupation from the end of the Late Bronze Age onward, to generate more data on this period. An example for such a site could be Tell al-Mazar, where Late Bronze Age material has been attested from several site-surveys, but excavations only reached the 11th century BCE (Yassine and Van der Steen 2012, 2). Its location, almost dead centre between Tell Deir 'Alla and Tell es-Sa'idiyeh could provide valuable insights into the organisation of the Central Jordan Valley, commodities and ideas being traded, and interconnectedness between the various sites in the Iron Age I. Yassine and Van der Steen postulated that the substantial Iron Age I sanctuary which was constructed in the 11th century BCE could indicate Tell al-Mazar took over Tell Deir 'Alla's religious function, following the Late Bronze Age destruction of the sanctuary (Ibid., 81). Linking the chronologies of 12th century Tell Deir 'Alla to Tell al-Mazar would certainly add greatly in understanding the processes the Central Jordan Valley went through during the 12th century BCE.

Another interesting endeavour would be to excavate more Iron Age I layers on Tell Deir 'Alla itself. Targeted excavations on the west and/or south slope of the mound would yield occupational layers from Franken's 'first phase' relatively quickly, and would certainly cast more light on the tell's function during the Iron Age I. However, before any such excavations can take place, it is of the utmost importance that the more recent excavations at Tell Deir 'Alla are provided with final reports, not only for the Iron Age I, but also the Late Bronze Age and Iron Age II.

This goes for various excavated Iron Age I sites in the wider region, as mentioned in chapter 3. While it is certainly not impossible to work with an old excavation archive, the amount of added information contained in the minds of the original excavators can't be overstated. Much can be lost when certain important connections aren't written down, contextual information gets lost, or accidental mistakes in the documentation can't be amended. Additionally, publication renders the excavation data accessible to a wider public, rather than an exclusive few. It is therefore paramount that already completed excavations are published, their excavation archives digitised for further research, and the excavators' interpretations substantiated and explained in detail.

Due to the destructive nature of archaeology, it could be argued that there is a responsibility for archaeologists to extract as much information from the archives of completed excavations as possible. It is self-explanatory, but nonetheless crucial, to realise that archaeological sites can't be excavated again, and all the information that remains is in the

excavations' archives (Halbertsma 2019, 30). A small first step in showing the potential of such archives has been proposed in this thesis, but there are numerous other possibilities with datasets such as these.

While this thesis focussed largely on the paper documentation of the Tell Deir 'Alla archive, most of the finds recovered during the 1960s excavations were stored in either Amman or Leiden. These stored objects and materials provide various interesting avenues for further research. While finding objects in large storage depots can be a challenge of its own, analyses on objects from completed excavations could be worthwhile. Mentioned above was the possibility to analyse the metal samples from the 1960s excavations for provenance. This could yield interesting results which could potentially, when compared to results from other sites, make the replacement of Cypriot copper by southern Levantine copper archaeologically visible and traceable, or shed light on metal recycling economies during this period. It is clear that any potential similarities or differences between the metal economy from the Tell es-Sa'idiyeh cemetery and Tell Deir 'Alla would create fascinating new research questions. Other avenues to explore are XRF studies on the provenance of ceramics, which could show whether certain ceramic objects are made locally or imported, enhancing our knowledge of trade relations during this period. Evaluations of the plant and animal remains, as mentioned above, may well give insights into seasonality in subsistence and habitation. Osteological, isotopic, and aDNA analyses on animal and human bones can yield numerous interesting results regarding diet, mobility, kinship, health, and gender, provided the bones have survived both the test of time in the ground, old conservation methods, or their storage after excavation (which unfortunately is not the case for some of the material from the 1960s Tell Deir 'Alla excavations).

Lastly, with the growing amount of scholarly interest in ancient copper production in the Wadi Arabah, studies on the links between semi-nomadism and metalworking are an interesting avenue of research. Recent research on metalworking in the 5th and 4th millennium BCE in the Southern Levant have yielded results that clearly show that itinerant metalworking is attested from the onset of metal production in the region, and perhaps even specialized pastoralism surrounding metalworking (Anfinset 2010, 198). Ethnographic studies have shown that nomadic societies invest in regions they control, with building activities, land cultivation, and protection (Van der Steen 2004, 129-130). Combining ethnographic studies with the archaeological record could shed more light on how the Tell Deir 'Alla Phase B installations may have worked, the amount of labour required to make them work, and their implications for the society that used them.

5.4 – Concluding remarks

Throughout working on this thesis it became clear that, while not without its challenges, utilising the 1960s Tell Deir ‘Alla archive can significantly add to, scrutinise, and refine the understanding of specific contexts. Instead of closing a chapter, renewed interpretations can actually provide new challenges, new perspectives, and new research questions. While this thesis’s contribution to understanding Iron Age I Tell Deir ‘Alla is modest, it is a necessary stepping stone for future work with the Tell Deir ‘Alla archive, and possible future work on other phases and areas on the site.

While the excavation methods used by Franken in the 1960s have aged, as did the physical state of the Tell Deir ‘Alla archive, it is inspiring to realise that data which was collected over half a century ago is able to contribute to the archaeological debates today. That drawings which were made on cold winter mornings in the Jordan Valley can still tell complicated stories, fieldnotes written under the hot humid sun portray choices, mistakes, and exciting discoveries made in the field. That photographs depict not only fascinating archaeology, but also regular life on both an excavation and in a small, rural village in the Jordan Valley. These realisations made working with this archive a rewarding experience. Giving a second life to these old papers made preserving and analysing this archive worthwhile, and revisiting Tell Deir ‘Alla an absolute pleasure.



Figure 256: Returning to Tell Deir 'Alla, alongside the new highway under construction. Note the excavation trenches visible along the tell's northern slope (from the Tell Deir 'Alla archive).

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Abstract

Excavations produce significant quantities of data, a fact that was no different 60 years ago than it is today. Unfortunately, the resulting data are not always (fully) published, and the excavation archives, comprising photographs, notebooks and drawings, are sometimes left to gather dust for decades in storerooms, basements and attics. One such archive is the Tell Deir 'Alla archive, which resulted from the 1960s excavations done by Prof Dr H. J. Franken on this important site in the Jordan Valley.

While Tell Deir 'Alla received significant scholarly and popular attention mainly due to the discovery of two religious complexes dating to both the Late Bronze Age and the Iron Age II periods, the layers in between them, corresponding to the Iron Age I, somewhat fell through the cracks. While a robust pottery chronology was published by the excavator, in combination with a summary of the stratigraphy, a significant amount of the excavated data was left out. While architecture and stratigraphy were touched upon, they were significantly summarised, as were the associating finds. A lot more detail and complexity existed in the original field documentation.

The Iron Age I is not well understood, and of the few excavations that were done, not many have been published. As such, the Tell Deir 'Alla archive holds significant potential for further research on this period. To demonstrate the potential of working with this archive, a pilot-study was started in a well-defined area of the site, for a specific archaeological period: the the end of the Late Bronze Age and the Iron Age I (ca. 1200-1000). One of the most standout features from this period was chosen: the Phase B installations. These installations, interpreted by the excavator as large-scale bronze casting-foundries, play an important role in various debates regarding the Iron Age I period, varying from the biblical link between metallurgy and the Jordan Valley, to the presence of the 'Sea Peoples'. In this MPhil project the following research question was addressed:

"How can a re-evaluation of the excavation documentation of the Phase B installations at Tell Deir 'Alla contribute to understanding their function, and their overall role in the Iron Age I economy?"

A major research outcome was the digitisation of the excavation archive. While this proved a significant and arduous task, it was successfully completed over the course of this research. This digitised Tell Deir 'Alla archive can now be made available in open-access, allowing future archaeologists to scrutinise Franken's theories, as well as the theories proposed in this thesis. After digitising the archive was completed, it was shaped into a workable database. This allowed for subsequent research, focusing on the Phase B installations. By analysing and bringing together the information provided by the section drawings, top-plans, fieldnotes, and photographs, the chronology of this phase could be refined, the stratigraphy amended, and the find categories which were left out in the original publication added. This in turn allowed for a re-evaluation of the Phase B installations, based on all of the available evidence in the archive. An extensive literature review allowed these new insights to be placed in a wider historical framework. By revisiting this old excavation archive from a modern perspective, the role of Tell Deir 'Alla during this poorly understood period could be re-evaluated.

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